

=> fil wpix  
FILE 'WPIX' ENTERED AT 15:15:46 ON 10 JAN 2008  
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FILE LAST UPDATED: 7 JAN 2008 <20080107/UP>  
MOST RECENT THOMSON SCIENTIFIC UPDATE: 200802 <200802/DW>  
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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20061231/UPIC, 20070601/UPIC and 20071001/UPIC. <<<

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(FILE 'HOME' ENTERED AT 14:40:29 ON 10 JAN 2008)

FILE 'HCAPLUS' ENTERED AT 14:40:39 ON 10 JAN 2008

L1 1 SEA ABB=ON PLU=ON US2007077460/PN  
SEL RN

FILE 'REGISTRY' ENTERED AT 14:41:11 ON 10 JAN 2008

L2 7 SEA ABB=ON PLU=ON (7440-05-3/BI OR 7440-06-4/BI OR  
7440-44-0/BI OR 7782-42-5/BI OR 785785-69-5/BI OR  
785785-70-8/BI OR 785808-93-7/BI)  
D SCA

FILE 'WPIX' ENTERED AT 14:43:11 ON 10 JAN 2008

L3 1 SEA ABB=ON PLU=ON US20070077460/PN  
D IFULL

FILE 'HCAPLUS' ENTERED AT 14:48:29 ON 10 JAN 2008

L4 49195 SEA ABB=ON PLU=ON (C OR CARBON) (3A) (FILM? OR THINFILM?)

L5 QUE ABB=ON PLU=ON PORO? OR PORE OR VOID# OR HOLE# OR  
PERVIOUS

L6 600 SEA ABB=ON PLU=ON L4 (3A) L5

L7 QUE ABB=ON PLU=ON PARTICLE? OR MICROPARTICL? OR  
PARTICULAT?

Formatted: French (France)

L8 61 SEA ABB=ON PLU=ON L6 AND L7

L9 QUE ABB=ON PLU=ON DISPERS?

Formatted: French (France)

L10 QUE ABB=ON PLU=ON DISTRIBUT? OR INTERSPERS? OR  
SCATTER? RO SPREAD?

L11 21 SEA ABB=ON PLU=ON L8 AND (L9 OR L10)

L12 12 SEA ABB=ON PLU=ON L11 AND L9

L13 212447 SEA ABB=ON PLU=ON (L9 OR L10) (S) L7  
 L14 16 SEA ABB=ON PLU=ON L11 AND L13  
 L15 14 SEA ABB=ON PLU=ON L14 AND (PY<=2004 OR PRY<=2004 OR  
 AY<=2004)

FILE 'WPIX' ENTERED AT 15:05:15 ON 10 JAN 2008

L16 59 SEA ABB=ON PLU=ON L6 AND L7  
 L17 13 SEA ABB=ON PLU=ON L16 AND L13  
 L18 QUE ABB=ON PLU=ON PT OR PLATINUM  
 L19 2 SEA ABB=ON PLU=ON L17 AND L18  
 L20 11 SEA ABB=ON PLU=ON (L17 OR L19) AND (PY<=2004 OR  
 PRY<=2004 OR AY<=2004)

FILE 'HCAPLUS' ENTERED AT 15:08:43 ON 10 JAN 2008

L21 5 SEA ABB=ON PLU=ON L15 AND L18  
 L22 14 SEA ABB=ON PLU=ON L15 OR L21

FILE 'COMPENDEX' ENTERED AT 15:09:27 ON 10 JAN 2008

L23 18 SEA ABB=ON PLU=ON L6 AND L7  
 L24 7 SEA ABB=ON PLU=ON L23 AND L13  
 L25 2 SEA ABB=ON PLU=ON L24 AND L18  
 L26 6 SEA ABB=ON PLU=ON (L24 OR L25) AND PY<=2004

FILE 'JAPIO' ENTERED AT 15:12:30 ON 10 JAN 2008

L27 12 SEA ABB=ON PLU=ON L6 AND L7  
 L28 5 SEA ABB=ON PLU=ON L27 AND L13  
 L29 1 SEA ABB=ON PLU=ON L28 AND L18  
 L30 3 SEA ABB=ON PLU=ON (L28 OR L29) AND PY<=2004

FILE 'INSPEC' ENTERED AT 15:13:27 ON 10 JAN 2008

L31 25 SEA ABB=ON PLU=ON L6 AND L7  
 L32 3 SEA ABB=ON PLU=ON L31 AND L13  
 L33 0 SEA ABB=ON PLU=ON L32 AND L18

FILE 'WPIX' ENTERED AT 15:14:09 ON 10 JAN 2008  
 SEL L20 PN,AP

FILE 'HCAPLUS' ENTERED AT 15:14:28 ON 10 JAN 2008

L34 15 SEA ABB=ON PLU=ON (EP1995-114048/AP OR WO1991-JP882/AP  
 L35 12 SEA ABB=ON PLU=ON L22 NOT L34

FILE 'HCAPLUS, COMPENDEX, JAPIO, INSPEC' ENTERED AT 15:15:03 ON 10  
 JAN 2008

L36 20 DUP REM L35 L26 L30 L32 (4 DUPLICATES REMOVED)

=> d l20 ifull 1-11

L20 ANSWER 1 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
 ACCESSION NUMBER: 2006-129293 [14] WPIX  
 DOC. NO. CPI: C2006-045046 [14]  
 TITLE: Composition for forming porous  
 carbon film, contains polyimide  
 obtained by dehydration ring closure of polyamic  
 acid obtained by reacting diamine and  
 tetracarboxylic acid anhydride, organic  
 particles and solvent medium  
 DERWENT CLASS: A14; A26; A32; E13; E36  
 INVENTOR: KAWAGUCHI K; MATSUKI Y

PATENT ASSIGNEE: (JAPS-C) JSR CORP  
COUNTRY COUNT: 1

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
JP 2006028317	A	20060202	(200614)*	JA	10	[0]

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2006028317 A 20040715		JP 2004-208052	

PRIORITY APPLN. INFO: JP 2004-208052 20040715

## INT. PATENT CLASSIF.:

IPC ORIGINAL: C01B0031-00 [I,C]; C01B0031-02 [I,A]; C08K0005-00 [I,C]; C08K0005-151 [I,A]; C08K0005-3415 [I,A]; C08L0027-00 [I,C]; C08L0027-12 [I,A]; C08L0079-00 [I,C]; C08L0079-08 [I,A]

## BASIC ABSTRACT:

JP 2006028317 A UPAB: 20060227

NOVELTY - A composition contains a polymer (A) chosen from polyimide and polyamic acid, fluorine atom-containing organic particles (B) and a medium (C) chosen from N-alkyl-2-pyrrolidone, lactone and dialkyl imidazolidinone. The polyimide is obtained by dehydration ring closure of polyamic acid obtained by reacting a diamine compound and tetracarboxylic acid anhydride.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for formation of porous carbon film which involves forming a coating film of above composition on a substrate or into a container, heating the coating film in oxidation atmosphere, peeling the film from the substrate or the container, and again heating the coating film under inert atmosphere or in vacuum.

USE - For formation of porous carbon film (claimed).

ADVANTAGE - The composition enables formation of porous carbon film having uniform pore size.

## EXTENSION ABSTRACT:

EXAMPLE - (In g) Pyromellitic dianhydride (50) and 4,4'-diamino diphenyl ether (46) were dissolved in N-methyl-2-pyrrolidone (240), and reacted at room temperature for 6 hours. A polyamic acid solution (336) having intrinsic viscosity of 1.21 dl/g and polyamic acid content of 27 mass% was obtained. A dispersion liquid (72) containing 40 mass% of polytetrafluoroethylene particles having diameter of 0.3 microns dispersed in N-methyl-2-pyrrolidone, was added to the polyamic acid solution. The mixture was stirred at room temperature for 3 hours to form film-forming composition. - The composition was applied on Teflon and heated to 150degreesC for 15 hours under atmospheric pressure. The obtained film was further heated to 800degreesC for 10 hours in nitrogen atmosphere to form a porous carbon film having thickness of 500 microns. Elemental analysis of the porous film showed presence of 95.5% carbon, 0.5% hydrogen, 0.3% oxygen and 3% nitrogen. The porous film was found to have uniform pore size and bending strength of 100 MPa according to JIS K6911.

## FILE SEGMENT:

CPI

## MANUAL CODE:

CPI: A04-E10; A05-J01A; A10-E05B; A11-A02A;  
A11-B04; E07-A02C; E07-A02G; E07-A03C; E07-D03;  
E07-D09D; E31-N03D

ACCESSION NUMBER: 2005-494981 [50] WPIX  
 DOC. NO. CPI: C2005-150559 [50]  
 DOC. NO. NON-CPI: N2005-403535 [50]  
 TITLE: Infrared-ray absorption film for infrared-ray  
 sensor used in detecting infrared-rays, uses porous  
 material, preferably carbon or meso-porous material  
 DERWENT CLASS: L03; S03; T04; U14  
 INVENTOR: ITOH T; ITO T  
 PATENT ASSIGNEE: (ITOH-I) ITOH T; (NPDE-C) NIPPONDENSO CO LTD;  
 (NPDE-C) DENSO CORP  
 COUNTRY COUNT: 2

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
US 20050133722	A1	20050623	(200550)*	EN	4[2]	
JP 2005175069	A	20050630	(200550)	JA	6	
US 7183551	B2	20070227	(200718)	EN		

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 20050133722	A1	US 2004-8804	20041209
JP 2005175069	A	JP 2003-410372	
		20031209	

PRIORITY APPLN. INFO: JP 2003-410372 20031209

## INT. PATENT CLASSIF.:

IPC ORIGINAL: G01J0005-00 [I,A]; G01J0005-00 [I,C]  
 IPC RECLASSIF.: G01J0001-02 [I,A]; G01J0001-02 [I,C]; H01L0027-14  
 [I,A]; H01L0027-14 [I,C]; H01L0037-00 [I,A];  
 H01L0037-00 [I,C]

## BASIC ABSTRACT:

US 20050133722 A1 UPAB: 20051223  
 NOVELTY - An infrared-ray absorption film uses porous material, preferably  
 carbon or meso-porous material.  
 DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for  
 producing infrared-ray absorption film comprising applying a porous material  
 precursor solution onto substrate; and conducting sintering.  
 USE - Used for infrared-ray sensor (claimed) used in detecting infrared-rays.  
 ADVANTAGE - Acquired through an economical process, e.g. ink jet printing, by  
 printing and sintering porous material solution without using vacuum process,  
 and has low reflection factor and high absorption ratio equivalent to those of  
 gold black. DESCRIPTION OF DRAWINGS - The figure shows a schematic view of  
 carbon porous material film.  
 Carbon particles (2)  
 Pores (3)  
 Carbon matrix (4)

## TECHNOLOGY FOCUS:

ELECTRONICS - Preferred Properties: The pore (3) size of the  
 porous material is hundreds of nm to several microns. The porous  
 material precursor solution is a solution prepared by  
 dispersing carbon particles (2) and resin  
 particles in a dispersion medium containing a  
 meso-porous skeletal material, a surface active agent, and water.  
 The mesoporous skeletal material is metal alkoxide. Preferred  
 Methods: Application is ink jet printing.

FILE SEGMENT: CPI; EPI

MANUAL CODE: CPI: L04-E05C  
 EPI: S03-A03; T04-G02J; U14-E01A; U14-E01B;  
 U14-E01C

L20 ANSWER 3 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
 ACCESSION NUMBER: 2005-335300 [35] WPIX  
 DOC. NO. CPI: C2005-104148 [35]  
 DOC. NO. NON-CPI: N2005-274223 [35]  
 TITLE: Functional porous film useful in sensor e.g. carbon  
 dioxide sensor comprises porous body having pore  
 and functional portion disposed in pore and having  
 different function from porous body  
 DERWENT CLASS: E36; J04; L03; P53; S03  
 INVENTOR: EGASHIRA M; HYODO T; ONO S; SHIMIZU Y  
 PATENT ASSIGNEE: (DENK-C) TDK CORP  
 COUNTRY COUNT: 37

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
EP 1528613	A1	20050504	(200535)*	EN	43 [21]	
JP 2005132644	A	20050526	(200535)	JA	20	
JP 2005133114	A	20050526	(200535)	JA	16	
US 20050109617	A1	20050526	(200535)	EN		
CN 1611349	A	20050504	(200558)	ZH		
KR 2005040714	A	20050503	(200637)	KO		

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## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 1528613 A1		EP 2004-25548	20041027
JP 2005132644 A		JP 2003-367759	
20031028			
JP 2005133114 A		JP 2003-367760	
20031028			
KR 2005040714 A		KR 2004-83672	20041019
US 20050109617 A1		US 2004-972561	
20041026			
CN 1611349 A		CN 2004-10086983	
20041027			

PRIORITY APPLN. INFO: JP 2003-367759 20031028  
 JP 2003-367760 20031028

## INT. PATENT CLASSIF.:

MAIN: B22F003-11  
 IPC RECLASSIF.: B22F0003-11 [I,A]; B22F0003-11 [I,A]; B22F0003-11  
 [I,C]; B22F0003-11 [I,C]; B22F0007-02 [I,C];  
 B22F0007-04 [I,A]; C04B0038-06 [I,A]; C04B0038-06  
 [I,C]; C22C0001-08 [I,A]; C22C0001-08 [I,C];  
 G01N0027-02 [I,A]; G01N0027-02 [I,C]; G01N0027-04  
 [I,A]; G01N0027-04 [I,C]; G01N0027-12 [I,A];  
 G01N0027-12 [I,C]; G01N0027-22 [I,A]; G01N0027-22  
 [I,C]; G01N0027-406 [I,A]; G01N0027-406 [I,C];  
 G01N0027-407 [I,A]; G01N0027-407 [I,C];  
 G01N0027-409 [I,A]; G01N0027-409 [I,C]; G01N0027-41  
 [I,A]; G01N0027-41 [I,C]; G01N0027-416 [I,A];  
 G01N0027-416 [I,C]; G01N0027-49 [I,A]; G01N0027-49  
 [I,C]; H01M0004-86 [I,A]; H01M0004-86 [I,C];

H01M0004-88 [I,A]; H01M0004-88 [I,C]

## BASIC ABSTRACT:

EP 1528613 A1 UPAB: 20051222

NOVELTY - A functional porous film (10) comprises a porous body (11) having a pore (11A) and a structure in which several particles (11B) are connected to one another, and a functional portion (12) dispersed in particle form and having a different function from the porous body.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) manufacturing functional porous film involving forming a precursor film including a spherical pore-forming powder (e.g. resin powder) on which a material of functional portion is deposited and a material powder of the porous body, and heating the precursor film to remove the pore-forming powder and sinter the material powder of the porous body; and (2) manufacturing a sensor.

USE - In a sensor (claimed) such as carbon dioxide sensor, hydrogen sensor, carbon monoxide sensor, nitrogen oxide sensor, humidity sensor, pH sensor and ion sensor.

ADVANTAGE - The size or shape of the pore can be controlled with high precision by organic powder. Therefore, the porosity and specific surface area can be increased and the uniformity of the size and shape of the pore can be improved. The downsizing of sensor device can be achieved and the performance can be improved. The response speed and the recovery speed of the sensor can be improved.

DESCRIPTION OF DRAWINGS - The figure shows a sectional view of the functional porous film.

functional porous film (10) porous body (11)  
pore (11A)  
particles (11B)  
functional portion. (12)

FILE SEGMENT: CPI; GMPI; EPI

MANUAL CODE: CPI: E11-Q03J; E31-A03; E31-A05; E31-H05; E31-N05B;  
E31-N05C; J04-C02A; J04-C04A; L03-E05C  
EPI: S03-E03C

L20 ANSWER 4 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

ACCESSION NUMBER: 2004-775998 [76] WPIX

DOC. NO. CPI: C2004-271767 [76]

DOC. NO. NON-CPI: N2004-611283 [76]

TITLE: Metal-supported porous carbon  
film for electrode of fuel cell comprises  
fine metal particles with specified mean  
particle diameter dispersed and  
supported on pore surface walls

DERWENT CLASS: L03; X16

INVENTOR: FUJII Y; MATSUO M; OHYA S; OHYA N; TAKAGI; TAKAGI J

PATENT ASSIGNEE: (UBEI-C) UBE IND LTD; (FUJI-I) FUJII Y; (MATS-I)

MATSUO M; (OHYA-I) OHYA S; (TAKA-I) TAKAGI J

COUNTRY COUNT: 106

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
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WO 2004095614	A2	20041104	(200476)*	EN	27	[8]
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JP 2004335459	A	20041125	(200477)	JA	13	
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US 20070077460	A1	20070405	(200726)	EN		
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## APPLICATION DETAILS:

→ PGPub

of 10/550,902

PATENT NO	KIND	APPLICATION	DATE
WO 2004095614	A2	WO 2004-JP5092	
20040408			
JP 2004335459	A	JP 2004-121247	
20040416			
US 20070077460	A1	WO 2004-JP5092	
20040408			
US 20070077460	A1	US 2005-550902	20050928

PRIORITY APPLN. INFO: JP 2003-113978 20030418

INT. PATENT CLASSIF.:

IPC ORIGINAL: B01J0021-00 [I,C]; B01J0021-18 [I,A]; H01M0004-00 [I,A]; H01M0004-00 [I,C]; H01M0008-00 [I,A]; H01M0008-00 [I,C]

IPC RECLASSIF.: C01B0031-00 [I,C]; C01B0031-02 [I,A]; H01M0004-86 [I,A]; H01M0004-86 [I,A]; H01M0004-86 [I,C]; H01M0004-86 [I,C]; H01M0004-88 [I,A]; H01M0004-88 [I,A]; H01M0004-88 [I,C]; H01M0004-88 [I,C]; H01M0004-90 [I,C]; H01M0004-90 [I,C]; H01M0004-92 [I,A]; H01M0004-92 [I,A]; H01M0008-10 [I,A]; H01M0008-10 [I,A]; H01M0008-10 [I,C]; H01M0008-10 [I,C]

BASIC ABSTRACT:

WO 2004095614 A2 UPAB: 20060122

NOVELTY - Metal-supported porous carbon film comprises fine metal particles with a mean particle diameter of 0.7-20 nm dispersed and supported on pore surface walls. The fine metal particles are produced by chemical reduction of metal compound with a reducing agent using a catalyst on the pore surfaces of the porous carbon film. About 15 - 95 % of the metal fine particles consist of multiply twinned particles.

USE - For electrode and membrane-electrode assembly of fuel cell (claimed).

ADVANTAGE - It is possible to easily support metal fine particles by employing only a very gentle stirring procedure. The growth of the metal fine particles is in the form of epitaxial growth, and the resulting metal fine particles have very high crystallinity while the particles are also physicochemically stable, thereby allowing the fine metal particles to be finely dispersed and supported on the pore walls in a uniform manner. Precipitation of the metal fine particles occurs simultaneously across the whole surface without a location-dependent time lag, and the particle sizes of the metal fine particles in the support are monodispersively arranged, with the particle sizes freely controlled on the nanoscale. Multiply twinned particles have particle surfaces composed of highly surface active, high-density crystal faces and, because of their shape stability which allows them to maintain their initial structure for long periods, enables to obtain a stably operating fuel cell with overall enhanced properties. It is possible to obtain the metal-supported porous carbon film where the support structure is such that metal fine particles having a controlled particle size are uniformly supported to allow effective utilization of the metal-based catalyst, and the fabrication steps are simple. TECHNOLOGY FOCUS:

METALLURGY - The metal fine particles are composed mainly of platinum. The catalyst is a palladium compound supported on a carbon film.

FILE SEGMENT: CPI; EPI  
MANUAL CODE: CPI: L03-E04B  
EPI: X16-E06

L20 ANSWER 5 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
ACCESSION NUMBER: 2004-607473 [59] WPIX  
DOC. NO. CPI: C2004-220132 [59]

TITLE: Coated textile for clothes, comprises resin layer containing polyurethane resin(s) formed on fiber textile, and has preset moisture permeability and waterproofness

DERWENT CLASS: A14; A25; A87; E12; F06

INVENTOR: FURUYA T; OCHI S

PATENT ASSIGNEE: (TOYM-C) TOYOCO KK

COUNTRY COUNT: 1

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
JP 2004232099	A	20040819	(200459)*	JA	7	[0]

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## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2004232099	A	JP 2003-19374	20030128

PRIORITY APPLN. INFO: JP 2003-19374 20030128

INT. PATENT CLASSIF.:

IPC RECLASSIF.: D06M0015-21 [I,C]; D06M0015-31 [I,A]; D06M0015-37 [I,C]; D06M0015-564 [I,A]

## BASIC ABSTRACT:

JP 2004232099 A UPAB: 20050531

NOVELTY - A coated textile comprises a resin layer containing polyurethane resin(s) formed on the fiber textile. The textile has moisture permeability of 15000 g/m<sup>2</sup>.24 hours or more by potassium acetate method and waterproofness of 5000 mmH<sub>2</sub>O or more.

DETAILED DESCRIPTION - The highest attainment temperature and highest attainment humidity in clothes measured by perspiration simulation apparatus are 35 degrees C or less and 80 % RH or less, respectively.

USE - For clothes, knitted fabric and non-woven fabric.

ADVANTAGE - The coated textile has high water-proof capacity and high degree moisture permeability. The textile provides clothes with comfortable feeling of wear. The temperature and humidity of clothes are maintained favorably even during perspiration.

## TECHNOLOGY FOCUS:

TEXTILES AND PAPER - Preferred Textile: The coated textile contains organic microparticles having 1 mmol/g or more of salt type carboxyl groups. The microparticles contains cross-linked structure obtained by chemical alteration of nitrile group in acrylonitrile group polymer containing 50 weight% or more of acrylonitrile by hydrazine, divinylbenzene or triaryl isocyanurate. The salt type carboxyl group is introduced to the cross-linked structure by hydrolysis. Water-repellent processing is performed to the fiber textile before coating resin layer.

POLYMERS - Preferred Resin: The resin layer comprises two or more types of polyurethane resin having different solidification value. The solidification value of each polyurethane resin is in the range of 5-12. The difference between the solidification values of polyurethane resin is 0.5 or more.

## EXTENSION ABSTRACT:

EXAMPLE - Hydrazine and raw material microparticle water dispersion containing (in parts weight) acrylonitrile (450), methyl acrylate (40), p-styrene sulfonic acid soda (16) and water (118) were cross-linked and hydrolyzed in sodium hydroxide, to obtain moisture absorptive and releasing organic microparticles of mean particle diameter of 0.5 micrometers and swelling



degree of 80 %. Ester group polyurethane resin (75), ether group polyurethane resin (35), N,N'-dimethylformamide (20), organic microparticles (10) and Coronate HL (TM) (3) were mixed, to obtain urethane resin solution. A nylon textile fabric was subjected to refinement, dyeing, water-repellent processing and drying. The resin solution was coated on fabric, and was induced to 15 degrees C water. Solidification was carried out for 3 minutes, and the fabric was dried at 130 degrees C. A resin porous film of thickness 70 micrometers was formed. The coated textile had waterproofness of 10000 mmH<sub>2</sub>O, moisture permeability of 16000 g/m<sup>2</sup>.24 hours, dew formation amount of 5 g/m<sup>2</sup> and friction coefficient of 0.3. The temperature and humidity in the clothes were 33 degrees C and 57 % RH, respectively.

FILE SEGMENT: CPI  
 MANUAL CODE: CPI: A05-G01E; E07-D13B; E10-J02B4; E31-H05;  
 F03-E01

L20 ANSWER 6 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
 ACCESSION NUMBER: 2002-743732 [81] WPIX  
 CROSS REFERENCE: 2003-147433; 2007-360691  
 DOC. NO. CPI: C2002-210791 [81]  
 DOC. NO. NON-CPI: N2002-585880 [81]  
 TITLE: Electrode base material for fuel cells comprises  
 porous carbon film  
 having fine continuous holes of preset  
 average pore size and porosity  
 DERWENT CLASS: A85; L03; X16  
 INVENTOR: OYA N; YAO S  
 PATENT ASSIGNEE: (UBEI-C) UBE IND LTD  
 COUNTRY COUNT: 1

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
JP 2002170574	A	20020614	(200281)*	JA	8[5]	

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## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2002170574	A	JP 2001-78497	20010319

PRIORITY APPLN. INFO: JP 2000-287361 20000921

## INT. PATENT CLASSIF.:

IPC RECLASSIF.: B01J0021-00 [I,C]; B01J0021-18 [I,A]; B01J0023-42 [I,A]; B01J0023-42 [I,C]; B01J0032-00 [I,A]; B01J0032-00 [I,C]; C01B0031-00 [I,C]; C01B0031-04 [I,A]; C04B0035-52 [I,A]; C04B0035-52 [I,C]; H01M0004-88 [I,A]; H01M0004-88 [I,C]; H01M0004-96 [I,A]; H01M0004-96 [I,C]; H01M0008-10 [I,A]; H01M0008-10 [I,C]

## BASIC ABSTRACT:

JP 2002170574 A UPAB: 20050903

NOVELTY - An electrode base material comprises a porous carbon film having fine continuous holes with average pore size of 0.05-10 microns and porosity of 15-85%.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) metal micro-dispersed carbon film structure which has metal supported as nano-order microparticle; and

(2) carbon structure supporting metal catalyst comprising the metal micro-dispersed carbon film structure.

USE - Used for fuel cells such as solid polymer electrolyte group fuel cell or phosphoric acid group fuel cell.

ADVANTAGE - The gas flow is performed uniformly using the carbon film structure. The carbon film structure has high electroconductivity and thermal conductivity. TECHNOLOGY FOCUS:

ORGANIC CHEMISTRY - Preferred Electrode Base Material: The surfaces of the carbon film except the pores are flat. The carbon film has graphitization rate of 50% or more. The carbon film is obtained by heat carbonizing a porous heat resistant film under anaerobic atmosphere. Especially, several heat resistant polymer films are heat carbonized to form laminate of carbon film.

POLYMERS - Preferred Polymer: The heat resistant polymer is polyimide having biphenyl tetracarboxylic acid or its anhydride as a monomer component.

FILE SEGMENT: CPI; EPI  
MANUAL CODE: CPI: A05-J01B; A12-E06A; L03-E04B  
EPI: X16-C01; X16-E06

L20 ANSWER 7 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
ACCESSION NUMBER: 2000-535617 [49] WPIX  
DOC. NO. CPI: C2000-160125 [49]  
DOC. NO. NON-CPI: N2000-396259 [49]  
TITLE: Manufacturing of toner  
DERWENT CLASS: A89; G08; P84; S06  
INVENTOR: ITABASHI H  
PATENT ASSIGNEE: (CANO-C) CANON KK  
COUNTRY COUNT: 1

#### PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
JP 2000194159	A	20000714	(200049)*	JA	13 [2]	

<--

#### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2000194159 A		JP 1998-371310	
19981225			

PRIORITY APPLN. INFO: JP 1998-371310 19981225

INT. PATENT CLASSIF.:

IPC RECLASSIF.: G03G0009-087 [I,A]; G03G0009-087 [I,C]

#### BASIC ABSTRACT:

JP 2000194159 A UPAB: 20050705

NOVELTY - In the manufacturing of toner utilizing a polymerization process comprising adding a monomer composition including at least a polymerizable monomer in a reaction medium mainly composed of organic solvent, dissolving at least the polymerizable monomer in the reaction medium, polymerizing the polymerizable monomer, and precipitating the polymer produced by the polymerization from the reaction medium to produce the toner particles, a dispersion phase A including at least a coloring agent and a polymerizable monomer and a continuous phase B including at least a polymerization starting agent, the dispersion stabilizer and an organic solvent exist in a state that they are separated by a film C having pores, the continuous phase B is heated

at a polymerization temperature, and then the dispersion phase A is gradually extruded to the continuous base B side through the pores of the film C to polymerize the same while mixing both phases.

USE - Effectively used in the toner jet image formation by an electrophotographic process.

FILE SEGMENT: CPI; GMPI; EPI  
MANUAL CODE: CPI: A02-A00A; A08-S01; A10-B01; A10-D; A12-L05C2;  
G06-G05  
EPI: S06-A04C1

L20 ANSWER 8 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
ACCESSION NUMBER: 1996-041542 [05] WPIX  
CROSS REFERENCE: 1991-304836  
DOC. NO. CPI: C1996-014100 [05]  
DOC. NO. NON-CPI: N1996-034827 [05]  
TITLE: Void-containing polyester film for labels and posters  
- comprises film base material with  
dispersed thermoplastic resin  
particles and fine voids formed around the  
particles, and is soft enough to allow  
printing on it  
DERWENT CLASS: A23; A94; P73  
INVENTOR: HAMANO A; HATTORI K; ITO K; KUMANO K; KUZE K;  
OKUDAIRA T; TAGA A  
PATENT ASSIGNEE: (TOYM-C) TOYO BOSEKI KK  
COUNTRY COUNT: 1

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
EP 688814	A2	19951227	(199605)*	EN	18	[7]
<--						
EP 688814	A3	19960131	(199621)	EN		
<--						
EP 688814	B1	20030702	(200345)	EN		
<--						
DE 69133289	E	20030807	(200359)	DE		
<--						

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 688814 A2		EP 1995-114048	
19910409			
DE 69133289 E		DE 1991-69133289	
19910409			
EP 688814 A3 Div Ex		EP 1991-105622	
19910409			
EP 688814 B1 Div Ex		EP 1991-105622	
19910409			
EP 688814 A3		EP 1995-114048	
19910409			
EP 688814 B1		EP 1995-114048	
19910409			
DE 69133289 E		EP 1995-114048	
19910409			

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 688814 B1	Div ex	EP 451797 A
DE 69133289 E	Based on	EP 688814 A

PRIORITY APPLN. INFO: JP 1991-32067 19910130  
 JP 1990-95941 19900410

INT. PATENT CLASSIF.:

IPC RECLASSIF.: C08J0005-18 [I,A]; C08J0005-18 [I,C]

BASIC ABSTRACT:

EP 688814 A2 UPAB: 20060111 A. void-containing polyester-type film, obtained by drawing a resin compsn. sheet containing at least a polyester and at least a thermoplastic resin in at least one direction, comprises: (a) a film base material comprising the polyester; (b) fine particles of the thermoplastic resin dispersed in the film base material; and (c) fine voids formed around the fine particles. The fine particles are extended in the direction of the drawing. They have a longitudinal dia. of 1-50  $\mu$ m, a thickness of 10  $\mu$ m or less and a ratio of longitudinal dia.:thickness of 2-100. Also claimed are: (1) a laminate having an outer surface made of polyester, polyurethane, polyacrylic or a mixture placed on at least one side of the above polyester film; and (2) a recording paper containing the above film.

USE - The material can be used as a base material for labels, posters, recording paper (claimed), wrapping paper, etc.

ADVANTAGE - The film is light in weight, reducing its price/unit area. It is soft enough to allow printing (claimed) or typing (claimed) on it, or even writing (claimed) with a pencil or ball-point pen, and white enough to have satisfactory opacity. It has higher surface energy than a film containing uniform voids and is more resistant to having its surface layer peeled off.

DOCUMENTATION ABSTRACT:

EP688814

A void-containing polyester-type film, obtained by drawing a resin compsn. sheet containing at least a polyester and at least a thermoplastic resin in at least one direction, comprises:

- (a) a film base material comprising the polyester;
- (b) fine particles of the thermoplastic resin dispersed in the film base material; and
- (c) fine voids formed around the fine particles.

The fine particles are extended in the direction of the drawing. They have a longitudinal dia. of 1-50  $\mu$ m, a thickness of 10  $\mu$ m or less and a ratio of longitudinal dia.:thickness of 2-100.

Also claimed are:

- (1) a laminate having an outer surface made of polyester, polyurethane, polyacrylic or a mixture placed on at least one side of the above polyester film; and
- (2) a recording paper containing the above film.

USE

The material can be used as a base material for labels, posters, recording paper (claimed), wrapping paper, etc.

ADVANTAGE

The film is light in weight, reducing its price/unit area. It is soft enough to allow printing (claimed) or typing (claimed) on it, or even writing (claimed) with a pencil or ball-point pen, and white enough to have satisfactory opacity. It has higher surface energy than a film containing uniform voids and is more resistant to having its surface layer peeled off.

## EXAMPLE

A resin compsn. comprising 86 weight% poly(ethylene terephthalate) of intrinsic viscosity 0.62; 10 weight% of polystyrene of melt flow index = 1.8 g/10 min. and 4 weight% of anatase TiO<sub>2</sub> was melt-extruded at 285 °C at 8.5 m/sec. from a T-die having a 1.0 mm slit. The non-drawn sheet of thickness 600 µm was drawn at 80 °C at a draw ratio of 3.5 in the direction of its length, then at 130 °C at a draw ratio of 5 in the transverse direction, and then fixed at 220 °C while relaxing the sheet at a rate of 3%.

The surface layer (thickness 5 µm) contained 1% voids, other parts contained 18% voids and the average void content was 16 volume%. The non-drawn sheet contained particles of average size 4.8 µm at the surface and 0.6 µm elsewhere. A comparative non-drawn sheet was prepared as above using a T-die having a 4.0 mm slit, then drawn as above. The surface layer contained 12% voids, other parts contained 20% voids and the average void content was 19 volume%. The non-drawn sheet contained uniformly dispersed particles of average size 5.9 µm.

The films had an apparent specific gravity of 1.16 and 1.12 resp.; a light transmittance of 15% and 14% resp. and a thickness of 52 and 54 µm resp. Surface strength was measured by a tape-peeling test. Most of the surface layer of the example was not peeled off and all of the surface layer of the comparative was peeled off. (JR)

## PREFERRED

The film contains 1-40, (pref. 5-30) weight% of the thermoplastic resin and an average void percentage of 8-50, (pref. 8-30) volume%.

The thermoplastic resin is selected from a gp. containing polystyrene, polyolefin, polyamide, polyacrylic, cellulose, petroleum, synthetic and natural rubber, polycarbonate polysulphone polyacrylate and polyether type resins or may be a mixture (pref. is a polystyrene containing 5.0 weight% or less n-hexane extractables). The polyester is obtained by reacting ethylene glycol with terephthalic acid or a derivative

The outer surface layer of the laminate comprises a colouring agent, matt agent, antistatic agent, UV radiation absorber, a crosslinking agent or a mixture. This layer is formed by applying a resin solution, emulsion or dispersion on the polyester film. The recording paper is suitable for transfer, printing, typing and writing on, and has adhesiveness to ink and coating agents.

FILE SEGMENT: CPI; GMPI  
MANUAL CODE: CPI: A05-E01D3; A07-A03A; A07-A03D; A11-B02A;  
A12-S06A

L20 ANSWER 9 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
ACCESSION NUMBER: 1993-036190 [04] WPIX  
DOC. NO. CPI: C1993-016397 [21]  
TITLE: Mono-disperse single and double emulsions -  
contain particles of mean dia. 0.3 to 40  
microns and are free from particles with  
mean dia. as small as half mean dia. or less  
DERWENT CLASS: J02  
INVENTOR: KUKIZAKI M; NAKAJIMA T; NAKASHIMA T; SHIMIZU M  
PATENT ASSIGNEE: (MIYA-N) MIYAZAKI KEN; (MIYA-N) MIYAZAKI-KEN  
COUNTRY COUNT: 13

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 9300156	A1	19930107	(199304)*	JA	50	[15]
EP 546174	A1	19930616	(199324)	EN	28	[15]
JP 05220382	A	19930831	(199339)	JA	14	[15]
US 5326484	A	19940705	(199426)#	EN	23	[15]
EP 546174	A4	19930915	(199527)	EN		
EP 546174	B1	19971029	(199748)	EN	26	[15]
DE 69128087	E	19971204	(199803)	DE		
JP 2733729	B2	19980330	(199818)	JA	14	[0]

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9300156 A1		WO 1991-JP882	19910629
EP 546174 A4		EP 1991-911947	
DE 69128087 E		DE 1991-69128087	
19910629			
EP 546174 A1		EP 1991-911947	
19910629			
EP 546174 B1		EP 1991-911947	
19910629			
DE 69128087 E		EP 1991-911947	
19910629			
EP 546174 A1		WO 1991-JP882	19910629
EP 546174 B1		WO 1991-JP882	19910629
DE 69128087 E		WO 1991-JP882	19910629
JP 05220382 A		JP 1992-211964	
19920629			
JP 2733729 B2		JP 1992-211964	
19920629			
US 5326484 A		US 1992-906282	
19920629			

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## FILING DETAILS:

PATENT NO	KIND	PATENT NO
DE 69128087 E	Based on	EP 546174 A
JP 2733729 B2	Previous Publ	JP 05220382 A
EP 546174 A1	Based on	WO 9300156 A
EP 546174 B1	Based on	WO 9300156 A
DE 69128087 E	Based on	WO 9300156 A

PRIORITY APPLN. INFO: WO 1991-JP882 19910629  
 US 1992-906282 19920629

## INT. PATENT CLASSIF.:

MAIN: B01F003-08  
 SECONDARY: B01F017-00

IPC RECLASSIF.: B01F0003-08 [I,A]; B01F0003-08 [I,C]; B01F0005-00  
[I,C]; B01F0005-04 [I,A]; B01F0005-04 [I,C];  
B01F0005-10 [I,A]; B01J0013-00 [I,A]; B01J0013-00  
[I,C]

## BASIC ABSTRACT:

WO 1993000156 A1 UPAB: 20050823 Monodisperse single emulsion contains particles with a mean dia. within the range of 0.3-40 micron, and being free from particles with a dia. as small as 50% of the mean dia. or less and a monodisperse double emulsion containing particles with a mean dia. within the range of 0.3-40 micron and an internal phase concentration which is uniformly regulated to be within the range of 1-70%

## FILE SEGMENT:

CPI

## MANUAL CODE:

CPI: J02-A

L20 ANSWER 10 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN

ACCESSION NUMBER: 1991-305137 [42] WPIX

CROSS REFERENCE: 1995-321744; 1996-012097

DOC. NO. CPI: C1991-132138 [16]

TITLE: Water-in-oil type emulsion production - by dispersing in an aqueous phase at lower pressure into a fatty phase through a hydrophilic microporous membrane pretreated with fatty phase

DERWENT CLASS: D13; D21

INVENTOR: ASANO Y; FUJIMOTO M; KATO M; KATO R; KUMAZAWA R;  
OKONOGI S; SOTOYAMA K; TAKAHASHI K; TOYAMA K;  
WAKIGUCHI H; YUGUCHI H

PATENT ASSIGNEE: (MOMI-C) MORINAGA & CO LTD; (MORG-C) MORINAGA MILK  
CO LTD; (MORG-C) MORINAGA MILK IND CO LTD; (OKON-I)  
OKONOGI S

COUNTRY COUNT: 12

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
EP 452140	A	19911016	(199142)*	EN		
<--						
CA 2040241	A	19911012	(199201)	EN		
<--						
JP 03293026	A	19911224	(199208)	JA		
<--						
JP 04118044	A	19920420	(199222)	JA	6	
<--						
JP 04118045	A	19920420	(199222)	JA	6	
<--						
JP 04210553	A	19920731	(199240)	JA	7[1]	
<--						
JP 04258251	A	19920914	(199243)	JA	7[1]	
<--						
US 5279847	A	19940118	(199404)#	EN	17[1]	
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JP 2773966	B2	19980709	(199832)	JA	6	
<--						
JP 2773967	B2	19980709	(199832)	JA	6	
<--						
EP 452140	B1	19981230	(199905)	EN		
<--						
DE 69130685	E	19990211	(199912)	DE		
<--						

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 452140 A		EP 1991-303236	
19910411			
JP 03293026 A		JP 1990-95368	19900411
JP 03293026 A		JP 1990-95368	19900531
JP 03293026 A		JP 1990-238365	
19900907			
JP 04118044 A		JP 1990-238365	
19900907			
JP 2773966 B2		JP 1990-238365	
19900907			
JP 03293026 A		JP 1990-238366	
19900907			
JP 04118045 A		JP 1990-238366	
19900907			
JP 2773967 B2		JP 1990-238366	
19900907			
JP 03293026 A		JP 1990-401418	
19901211			
JP 04210553 A		JP 1990-401418	
19901211			
JP 03293026 A		JP 1991-15567	19910206
JP 04258251 A		JP 1991-15567	19910206
DE 69130685 E		DE 1991-69130685	
19910411			
EP 452140 B1		EP 1991-303236	
19910411			
DE 69130685 E		EP 1991-303236	
19910411			
US 5279847 A		US 1991-683182	
19910411			
EP 452140 B1 Related to		EP 1995-200749	
19910411			
EP 452140 B1 Related to		EP 1995-200750	
19910411			

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
DE 69130685 E	Based on	EP 452140 A
EP 452140 B1	Related to	EP 672351 A
EP 452140 B1	Related to	EP 685167 A
JP 2773966 B2	Previous Publ	JP 04118044 A
JP 2773967 B2	Previous Publ	JP 04118045 A

PRIORITY APPLN. INFO: JP 1991-15567 19910206

JP 1990-95368	19900411
JP 1990-238365	19900907
JP 1990-238366	19900907
JP 1990-401418	19901211
JP 1991-15567U	19910206
US 1991-683182	19910411

## INT. PATENT CLASSIF.:

MAIN: A23D007-02

SECONDARY: A23D007-00; B01F003-08

IPC RECLASSIF.: A23D0007-00 [I,A]; A23D0007-00 [I,C]; A23D0007-015



[I,A]; A23D0007-015 [I,A]; A23D0007-015 [I,C];  
 A23D0007-015 [I,C]; A23D0007-02 [I,A]; A23D0007-02  
 [I,A]; A23D0007-02 [I,C]; A23D0007-02 [I,C];  
 A23D0007-06 [I,A]; A23D0007-06 [I,C]; B01F0003-08  
 [I,A]; B01F0003-08 [I,A]; B01F0003-08 [I,A];  
 B01F0003-08 [I,C]; B01F0003-08 [I,C]; B01F0003-08  
 [I,C]; B01J0013-00 [I,A]; B01J0013-00 [I,A];  
 B01J0013-00 [I,C]; B01J0013-00 [I,C]

## BASIC ABSTRACT:

EP 452140 A UPAB: 20060107 Production of a water-in-oil (w/o) type emulsion, comprises dispersing in an aqueous phase at a low pressure into a fatty phase through a hydrophilic microporous membrane previously treated with the fatty phase.

Also claimed is a low-fat spread comprising the emulsions and a method for producing oil-in-water-in-oil (o1/w/o2) emulsion and oil-in-water (o/w) emulsion.

USE/ADVANTAGE - The emulsions are useful for foodstuffs, cosmetics, chemicals, feedstuffs etc. The process of the invention is hygienic and permits efficient production of stable emulsion with uniform particle sizes of a dispersed phase.

FILE SEGMENT: CPI  
 MANUAL CODE: CPI: D03-C; D03-G; D03-H01T; D08-B

L20 ANSWER 11 OF 11 WPIX COPYRIGHT 2008 THE THOMSON CORP on STN  
 ACCESSION NUMBER: 1990-002085 [01] WPIX  
 DOC. NO. CPI: C1990-000875 [21]  
 DOC. NO. NON-CPI: N1990-001480 [21]  
 TITLE: Humidity sensor - has porous silica  
 film containing dispersed  
 carbon particles  
 DERWENT CLASS: J04; L03; S03  
 INVENTOR: IKEJIRI M; YANAGISAWA M  
 PATENT ASSIGNEE: (SHIH-C) SEIKO EPSON CO LTD; (SHIH-C) SEIKO EPSON  
 CORP  
 COUNTRY COUNT: 4

## PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
GB 2220074	A	19891228	(199001)*	EN	36[15]	
<--						
JP 02132803	A	19900522	(199026)	JA		
<--						
US 5001453	A	19910319	(199114)	EN		
<--						
GB 2220074	B	19920108	(199202)	EN		
<--						
KR 9402635	B1	19940326	(199602)	KO		
<--						

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
GB 2220074 A		GB 1989-14537	19890623
JP 02132803 A		JP 1988-158788	
19880627			
JP 02132803 A		JP 1988-178587	
19880718			

JP 02132803 A	JP 1988-178588
19880718	
JP 02132803 A	JP 1988-241621
19880927	
KR 9402635 B1	KR 1989-8684 19890623
US 5001453 A	US 1989-370725
19890623	

PRIORITY APPLN. INFO: JP 1988-241621 19880927  
JP 1988-158788 19880627  
JP 1988-178587 19880718  
JP 1988-178588 19880718

## INT. PATENT CLASSIF.:

IPC RECLASSIF.: G01N0027-12 [I,A]; G01N0027-12 [I,A]; G01N0027-12  
[I,C]; G01N0027-12 [I,C]; H01C0007-00 [I,A];  
H01C0007-00 [I,C]

## BASIC ABSTRACT:

GB 2220074 A UPAB: 20050429 Humidity sensor comprises: a support of insulating material; electrodes on the support; and a porous SiO<sub>2</sub> film containing dispersed C particles. The support may comprise an insulating substrate or an insulating substrate carrying an SiO<sub>2</sub> support film. ADVANTAGE - Sensor provides reliable and accurate measurements over a wide humidity range and with low temperature dependence.

FILE SEGMENT: CPI; EPI  
MANUAL CODE: CPI: J04-C04; L03-B01A3  
EPI: S03-E02

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FILE COVERS 1898 TO DATE.

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THE ABSTRACT (/AB), BASIC INDEX (/BI) AND TITLE (/TI) FIELDS >>>

=> d l36 iall 1-20

L36 ANSWER 1 OF 20 INSPEC (C) 2008 IET on STN  
ACCESSION NUMBER: 2006:9219668 INSPEC Full-text  
TITLE: Antibacterial evaluation of carbon-ceramic  
composites  
AUTHOR: Yamamoto, O.; Nakagawa, Z. (Center for  
Geo-environ. Sci., Akita Univ., Japan)  
SOURCE: Sohn International Symposium. Advanced  
Processing of Metals and Materials. Proceedings  
of the International Symposium. New, Improved  
and Existing Technologies: Non-Ferrous Materials  
Extraction and Processing, 2006, p. 545-53 of  
xcv+899 pp., 20 refs.  
Editor(s): Kongoli, F.; Reddy, R.G.  
ISBN: 978 0 87339 637 0  
Published by: TMS (Minerals, Metals & Materials  
Society), Warrendale, PA, USA  
Conference: Sohn International Symposium.  
Advanced Processing of Metals and Materials.  
Proceedings of the International Symposium. New,  
Improved and Existing Technologies: Non-Ferrous  
Materials Extraction and Processing, San Diego,  
CA, USA, 27-31 Aug. 2006  
DOCUMENT TYPE: Conference; Conference Article  
TREATMENT CODE: Practical  
COUNTRY: United States  
LANGUAGE: English  
ABSTRACT: In antibacterial evaluation of carbon-ceramic composites, we prepared  
two type composites with emphasis on carbon-ZnO system; one was porous carbon  
materials containing ZnO nano- particles and another was porous ZnO coated with

carbon thin film. Porous carbon samples containing ZnO at highly dispersed state were prepared by carbonizing the resin exchanged by Zn<sup>2+</sup> ion. Porous ZnO coated with carbon thin film was obtained by the pyrolysis of poly (vinyl alcohol). Antibacterial activity of these composites obtained was evaluated by measuring the changes in electrical conductivity with bacteria growth. The antibacterial activity on the composites increased with the increase of the amount of ZnO in composite and decreased with the increase of carbonization temperature. The antibacterial activity for Staphylococcus aureus was found to be stronger than that for Escherichia coli. No activity of the carbon samples without ZnO was observed. The occurrence of antibacterial activity was supposed to be due to the generation of hydrogen peroxide from ZnO in composite. In the present work, antibacterial activity of carbon-ZnO composites was studied in the details

CLASSIFICATION CODE: E1525 Industrial processes; E3628 Biotechnology industry; E1710 Engineering materials  
 CONTROLLED TERM: biotechnology; carbon; ceramics; composite materials; electrical conductivity; microorganisms; nanoparticles; pyrolysis; resins; zinc compounds  
 SUPPLEMENTARY TERM: antibacterial evaluation; carbon-ceramic composites; porous carbon materials; ZnO nanoparticles; ZnO coated carbon thin film; dispersed state; resin; pyrolysis; poly (vinyl alcohol); electrical conductivity; bacteria growth; carbonization temperature; Staphylococcus aureus; Escherichia coli; hydrogen peroxide; C-ZnO  
 CHEMICAL INDEXING: CZnO ss, Zn ss, C ss, O ss  
 ELEMENT TERMS: O; O\*Zn; ZnO; Zn cp; cp; O cp; Zn; Zn<sup>2+</sup>; Zn ip 2; ip 2

L36 ANSWER 2 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2005:302639 HCAPLUS Full-text  
 DOCUMENT NUMBER: 142:358074  
 ENTRY DATE: Entered STN: 08 Apr 2005  
 TITLE: Electrode for fuel cell, its manufacture, membrane-electrode laminate, and the fuel cell  
 INVENTOR(S): Oya, Nobuo; Takagi, Jun  
 PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 INT. PATENT CLASSIF.:  
 MAIN: H01M004-86  
 SECONDARY: H01M004-88; H01M008-10  
 CLASSIFICATION: 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005093217	A	20050407	JP 2003-324476	20030917

PRIORITY APPLN. INFO.: JP 2003-324476  
 20030917

&lt;--

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005093217	ICM	H01M004-86
	ICS	H01M004-88; H01M008-10
	IPCI	H01M0004-86 [ICM,7]; H01M0004-88 [ICS,7]; H01M0008-10 [ICS,7]
	IPCR	H01M0004-86 [I,A]; H01M0004-86 [I,C*]; H01M0004-88 [I,A]; H01M0004-88 [I,C*]; H01M0008-10 [I,A]; H01M0008-10 [I,C*]
	FTERM	5H018/AA06; 5H018/AS01; 5H018/BB00; 5H018/BB08; 5H018/DD08; 5H018/EE03; 5H018/EE17; 5H026/AA06

## ABSTRACT:

The electrode has a porous C film structure, catalyst metal particles, and an ion-conductive electrolyte material as main constituent material; and furthermore is combined with a water-repellent material. The electrode is manufactured by depositing and fixing a porous C film on a water-repellent material; dispersing catalyst noble metal fine \*\*\*particles\*\*\* in a dispersant; loading the fine \*\*\*particles\*\*\* on the water-repellent material fixed C film; and coating the electrolyte material on the C film. The laminate is obtained by bonding the above electrode to an electrolyte membrane. The fuel cell has the above electrode as constituent element.

SUPPL. TERM: fuel cell electrode electrolyte membrane laminate; manuf noble metal catalyst loaded porous C film electrode

INDEX TERM: Polyoxyalkylenes, uses  
ROLE: DEV (Device component use); USES (Uses)  
(fluorine- and sulfo-containing, ionomers; manufacture of electrodes containing noble metal catalyst loaded porous C films for fuel cells)

INDEX TERM: Fuel cell electrodes  
Fuel cells  
(manufacture of electrodes containing noble metal catalyst loaded porous C films for fuel cells)

INDEX TERM: Fluoropolymers, uses  
ROLE: DEV (Device component use); USES (Uses)  
(manufacture of electrodes containing noble metal catalyst loaded porous C films for fuel cells)

INDEX TERM: Fluoropolymers, uses  
ROLE: DEV (Device component use); USES (Uses)  
(polyoxyalkylene-, sulfo-containing, ionomers; manufacture of electrodes containing noble metal catalyst loaded porous C films for fuel cells)

INDEX TERM: Ionomers  
ROLE: DEV (Device component use); USES (Uses)  
(polyoxyalkylenes, fluorine- and sulfo-containing; manufacture of electrodes containing noble metal catalyst loaded porous C films for fuel cells)

INDEX TERM: Polyimides, uses  
ROLE: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or

engineered material use); PROC (Process); USES (Uses)  
 (porous; manufacture of electrodes containing noble metal  
 catalyst loaded porous C  
 films for fuel cells)  
 INDEX TERM: Carbonaceous materials (technological products)  
 ROLE: DEV (Device component use); USES (Uses)  
 (porous; manufacture of electrodes containing noble metal  
 catalyst loaded porous C  
 films for fuel cells)  
 INDEX TERM: 7440-06-4, Platinum black, uses 9002-84-0,  
 PTFE  
 ROLE: DEV (Device component use); USES (Uses)  
 (manufacture of electrodes containing noble metal catalyst  
 loaded porous C films  
 for fuel cells)

L36 ANSWER 3 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2003:892223 HCAPLUS Full-text  
 DOCUMENT NUMBER: 139:352259  
 ENTRY DATE: Entered STN: 14 Nov 2003  
 TITLE: Aligned carbon nanotube films  
 on porous carriers and a process for  
 producing them  
 INVENTOR(S): Someya, Masao; Fujii, Takashi  
 PATENT ASSIGNEE(S): Mitsubishi Gas Chemical Company, Inc., Japan  
 SOURCE: U.S. Pat. Appl. Publ., 12 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 INT. PATENT CLASSIF.:  
 MAIN: D01F009-12  
 US PATENT CLASSIF.: 423447300  
 CLASSIFICATION: 49-1 (Industrial Inorganic Chemicals)  
 Section cross-reference(s): 57  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003211029	A1	20031113	US 2003-393364	200303 21
JP 2004002182	A	20040108	JP 2003-120697	200303 20
PRIORITY APPLN. INFO.:			JP 2002-83044	A 200203 25

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2003211029	ICM	D01F009-12
	INCL	423447300
	IPCI	D01F0009-12 [ICM,7]
	IPCR	D01F0009-12 [I,C*]; D01F0009-127 [I,A]
	NCL	423/447.300

JP 2004002182 ECLA D01F009/127  
 IPCI C01B0031-02 [ICM,7]; C01B0031-00 [ICM,7,C\*];  
 B01J0021-12 [ICS,7]; B01J0021-00 [ICS,7,C\*];  
 B01J0023-75 [ICS,7]; B01J0032-00 [ICS,7];  
 B82B0003-00 [ICS,7]; C01B0033-00 [ICS,7];  
 C01B0033-12 [ICS,7]; C01F0007-02 [ICS,7];  
 C01F0007-00 [ICS,7,C\*]; H01J0009-02 [ICS,7];  
 B01J0023-74 [ICS,7]  
 IPCR B82B0003-00 [I,C\*]; B82B0003-00 [I,A];  
 B01J0021-00 [I,C\*]; B01J0021-12 [I,A];  
 B01J0023-75 [I,C\*]; B01J0023-75 [I,A];  
 B01J0032-00 [I,C\*]; B01J0032-00 [I,A];  
 C01B0031-00 [I,C\*]; C01B0031-02 [I,A];  
 C01B0033-00 [I,C\*]; C01B0033-00 [I,A];  
 C01B0033-12 [I,A]; C01F0007-00 [I,C\*];  
 C01F0007-02 [I,A]; H01J0009-02 [I,C\*];  
 H01J0009-02 [I,A]  
 FTERM 4G069/AA03; 4G069/AA08; 4G069/BA03A; 4G069/BA03B;  
 4G069/BC59A; 4G069/BC66A; 4G069/BC67A;  
 4G069/BC67B; 4G069/BC68A; 4G069/CD10; 4G069/DA06;  
 4G069/EA01Y; 4G069/FB13; 4G072/AA36; 4G072/AA38;  
 4G072/BB02; 4G072/GG02; 4G072/GG03; 4G072/HH14;  
 4G072/JJ26; 4G072/LL05; 4G072/MM01; 4G072/PP17;  
 4G072/QQ06; 4G072/QQ09; 4G072/RR11; 4G072/RR15;  
 4G072/UU01; 4G076/AA02; 4G076/AA30; 4G076/AB11;  
 4G076/BA03; 4G076/BA13; 4G076/BB02; 4G076/BC02;  
 4G076/BC05; 4G076/BF04; 4G076/BF06; 4G076/CA10;  
 4G076/CA11; 4G146/AA11; 4G146/AB07; 4G146/AD24;  
 4G146/AD29; 4G146/AD32; 4G146/BA12; 4G146/BA42;  
 4G146/BB23; 4G146/BC03; 4G146/BC08; 4G146/BC44;  
 5C127/BA09; 5C127/BB07; 5C127/CC03; 5C127/CC62;  
 5C127/CC63; 5C127/CC66; 5C127/CC67; 5C127/DD12;  
 5C127/DD20; 5C127/DD38; 5C127/DD39; 5C127/DD63;  
 5C127/DD64; 5C127/EE17

## ABSTRACT:

Fine catalyst particles are loaded on a sol-gel method porous carrier having fine pores of 0.1-50 nm and a carbon compound is decomposed to form a carbon nanotube film on the carrier that is aligned perpendicular to the carrier surface. The starting sol to be processed by a sol-gel method is a dispersion of fine alumina particles, fine aluminum hydroxide particles, fine silica \*\*\*particles\*\*\* or mixts. thereof. Alternatively, the starting sol may be an aluminum alkoxide, an alkoxyasilane, a mixture thereof or a solution of an aluminum alkoxide, an alkoxyasilane or a mixture thereof. If desired, a flammable or a thermally decomposable organic compound may be added as a microporous template.

SUPPL. TERM: aligned carbon nanotube film  
 porous carrier sol gel  
 INDEX TERM: Catalysts  
 Sol-gel processing  
 (aligned carbon nanotube films  
 on porous carriers and a process for  
 producing them)  
 INDEX TERM: Aromatic hydrocarbons, reactions  
 Hydrocarbons, reactions  
 ROLE: RCT (Reactant); RACT (Reactant or reagent)  
 (aligned carbon nanotube films  
 on porous carriers and a process for  
 producing them)

INDEX TERM: Nanotubes  
(carbon, film; aligned carbon  
nanotube films on porous  
carriers and a process for producing them)

INDEX TERM: Hydrocarbons, reactions  
ROLE: RCT (Reactant); RACT (Reactant or reagent)  
(oxygen-containing; aligned carbon nanotube  
films on porous carriers and a  
process for producing them)

INDEX TERM: Ceramics  
(porous carrier; aligned carbon  
nanotube films on porous  
carriers and a process for producing them)

INDEX TERM: Hydrocarbons, reactions  
ROLE: RCT (Reactant); RACT (Reactant or reagent)  
(unsatd.; aligned carbon nanotube  
films on porous carriers and a  
process for producing them)

INDEX TERM: 7439-89-6, Iron, uses 7439-98-7, Molybdenum, uses  
7440-02-0, Nickel, uses 7440-48-4, Cobalt, uses  
ROLE: CAT (Catalyst use); USES (Uses)  
(aligned carbon nanotube films  
on porous carriers and a process for  
producing them)

INDEX TERM: 64-17-5, Ethanol, reactions 115-07-1, Propylene,  
reactions  
ROLE: RCT (Reactant); RACT (Reactant or reagent)  
(aligned carbon nanotube films  
on porous carriers and a process for  
producing them)

INDEX TERM: 7440-44-0, Carbon, uses  
ROLE: TEM (Technical or engineered material use); USES  
(Uses)  
(nanotubes, film; aligned carbon  
nanotube films on porous  
carriers and a process for producing them)

INDEX TERM: 1344-28-1, Alumina, uses 7631-86-9, Silica, uses  
159995-97-8, Aluminum silicon oxide  
ROLE: TEM (Technical or engineered material use); USES  
(Uses)  
(porous carrier; aligned carbon  
nanotube films on porous  
carriers and a process for producing them)

L36 ANSWER 4 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:872491 HCAPLUS Full-text

DOCUMENT NUMBER: 139:352690

ENTRY DATE: Entered STN: 07 Nov 2003

TITLE: Fuel cell electrode using porous  
carbon film, and its use in  
membrane-electrode assembly and fuel cell

INVENTOR(S): Oya, Nobuo; Takagi, Jun

PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

INT. PATENT CLASSIF.:

MAIN: H01M004-96

SECONDARY: B01J023-42; H01M008-10



CLASSIFICATION: 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003317728	A	20031107	JP 2002-127076	20020426

PRIORITY APPLN. INFO.:

JP 2002-127076

20020426

# PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003317728	ICM	H01M004-96
	ICS	B01J023-42; H01M008-10
	IPCI	H01M0004-96 [ICM,7]; B01J0023-42 [ICS,7]; H01M0008-10 [ICS,7]
	IPCR	B01J0023-42 [I,C*]; B01J0023-42 [I,A]; H01M0004-96 [I,C*]; H01M0004-96 [I,A]; H01M0008-10 [I,C*]; H01M0008-10 [I,A]

## ABSTRACT:

The electrode is made of the film having continuous pores in which noble metal particles are supported and C particles are filled. Preferably, functional groups are applied on the film surface for hydrophilicity. In the title assembly, the electrode is bonded to both sides of a polymer electrolyte membrane. Desired amount of the noble metal particles are dispersed in the electrode for effective utilization, and the resulting fuel cell shows stable operation.

## SUPPL. TERM:

fuel cell electrode porous carbon film; noble metal particle porous carbon film electrode; carbon particle porous carbon film

## INDEX TERM:

electrode; membrane electrode assembly fuel cell Polyimides, preparation  
 ROLE: IMF (Industrial manufacture); RCT (Reactant);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (C film precursor; fuel cell electrode using porous C film filled with noble metal particles and C particles)

## INDEX TERM:

Carboxyl group  
 Hydroxyl group  
 (C film surface component; fuel cell electrode using porous C film filled with noble metal particles and C particles)

## INDEX TERM:

Fuel cell electrodes  
 (fuel cell electrode using porous C film filled with noble metal particles and C particles)

## INDEX TERM:

Noble metals

ROLE: CAT (Catalyst use); DEV (Device component use);  
 USES (Uses)  
 (fuel cell electrode using porous  
 C film filled with noble metal  
 particles and C particles)

INDEX TERM: 29319-22-OP, 3,3',4,4'-Biphenyltetracarboxylic  
 dianhydride-p-phenylenediamine copolymer  
 32197-39-OP, 3,3',4,4'-Biphenyltetracarboxylic  
 dianhydride-p-phenylenediamine copolymer, polyimide  
 SRU  
 ROLE: IMF (Industrial manufacture); RCT (Reactant);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (C film precursor; fuel cell electrode using  
 porous C film filled  
 with noble metal particles and C  
 particles)

INDEX TERM: 7440-06-4, Platinum, uses  
 ROLE: CAT (Catalyst use); DEV (Device component use);  
 USES (Uses)  
 (fuel cell electrode using porous  
 C film filled with noble metal  
 particles and C particles)

INDEX TERM: 7440-44-OP, Carbon, uses  
 ROLE: CAT (Catalyst use); DEV (Device component use);  
 IMF (Industrial manufacture); PREP (Preparation); USES  
 (Uses)  
 (fuel cell electrode using porous  
 C film filled with noble metal  
 particles and C particles)

INDEX TERM: 264217-10-9, Nafion 1135  
 ROLE: DEV (Device component use); USES (Uses)  
 (membrane, membrane-electrode assembly formed with;  
 fuel cell electrode using porous  
 C film filled with noble metal  
 particles and C particles)

L36 ANSWER 5 OF 20 COMPENDEX COPYRIGHT 2008 EEI on STN

ACCESSION NUMBER: 2003(8):4874 COMPENDEX Full-text  
 TITLE: NiO-SiO<sub>2</sub> sol-gel nanocomposite films for optical  
 gas sensor.  
 AUTHOR: Martucci, A. (Dipto. Ingegneria Mecc. - Settore  
 M. Universita di Padova, 35131 Padova, Italy);  
 Bassiri, N.; Guglielmi, M.; Armelao, L.; Gross,  
 S.; Pivin, J.C.  
 SOURCE: Journal of Sol-Gel Science and Technology v 26 n  
 1-3 January/March 2003 2003.p 993-996  
 SOURCE: Journal of Sol-Gel Science and Technology v 26 n  
 1-3 January/March 2003 2003.p 993-996  
 CODEN: JSGTEC ISSN: 0928-0707  
 PUBLICATION YEAR: 2003  
 DOCUMENT TYPE: Journal  
 TREATMENT CODE: Experimental  
 LANGUAGE: English

ABSTRACT: Recently nanocomposites with sensing function are becoming a new area  
 of interest in the field of optical gas sensor. In fact, the optical transmittance  
 of nano-particles or thin films has been reported to be changed by atmosphere  
 gases. In particular it was found that NiO, Co<sub>3</sub>O<sub>4</sub> and Mn<sub>3</sub>O<sub>4</sub> thin films showed  
 reversible decrease in the Vis-NIR absorption due to CO. Aim of this work is the  
 synthesis and the characterization of SiO<sub>2</sub> sol-gel glass films doped with NiO  
 nanocrystals. Films of composition (100 -X)SiO<sub>2</sub>-XNiO with X = 10, 20, 40, were

obtained by mixing a matrix solution of  $\text{Si}(\text{OC}_2\text{H}_5)_4$  (TEOS) and  $\text{CH}_3\text{Si}(\text{OC}_2\text{H}_5)_3$  (MTES) as  $\text{SiO}_2$  precursors, with a doping solution containing  $\text{NiCl}_2$  as precursor for  $\text{NiO}$  particles. 3-Aminopropyltriethoxysilane (3-APTES), bearing either an ammine group capable of coordinating the Ni ions and hydrolysable siloxane groups for anchoring the metal complex moiety to the silicate matrix, was used as bifunctional ligand. Transmission electron microscopy micrographs showed a uniform distribution of round shaped nanoparticles in film heated at 500deg C with a mean diameter of 2.5 nm. The film composition evaluated from Rutherford backscattering spectrometry was in good agreement with the nominal one. As expected the density of the films heated at 1000deg C is much higher than the density of the film heated at 500deg C due to a residual porosity. Fourier transform infrared spectra also confirmed the presence of residual porosity in the films heated at 500deg C. 13 Refs. CLASSIFICATION CODE: 933.1 Crystalline Solids; 804 Chemical Products

## CONTROLLED TERM:

Generally; 801 Chemistry; 802.3 Chemical Operations; 741.3 Optical Devices and Systems  
\*Nanostructured materials; Fourier transform infrared spectroscopy; Mixing; Doping (additives); Composition; Transmission electron microscopy; Rutherford backscattering spectroscopy; Sol-gels; Thin films; Chemical sensors

## SUPPLEMENTARY TERM:

Optical gas sensors

## ELEMENT TERM:

$\text{Ni}^*\text{O}$ ;  $\text{NiO}$ ;  $\text{Ni}$  cp; cp;  $\text{O}$  cp;  $\text{Co}^*\text{O}$ ;  $\text{Co}_3\text{O}_4$ ;  $\text{Co}$  cp;  $\text{Mn}^*\text{O}$ ;  $\text{Mn}_3\text{O}_4$ ;  $\text{Mn}$  cp;  $\text{C}^*\text{O}$ ;  $\text{CO}$ ;  $\text{C}$  cp;  $\text{O}^*\text{Si}$ ;  $\text{SiO}$ ;  $\text{Si}$  cp;  $\text{O}$ ;  $\text{C}^*\text{H}^*\text{O}^*\text{Si}$ ;  $\text{Si}(\text{OC}_2\text{H}_5)_4$ ;  $\text{H}$  cp;  $\text{C}^*\text{O}^*\text{Si}$ ;  $\text{Si}(\text{OC}_2\text{H}_5)_4$ ;  $\text{Cl}^*\text{Ni}$ ;  $\text{NiCl}_2$ ;  $\text{Cl}$  cp;  $\text{Ni}$ ;  $\text{Ni}^*\text{O}^*\text{Si}$ ;  $\text{Ni}$  sy 3; sy 3;  $\text{O}$  sy 3;  $\text{Si}$  sy 3;  $\text{NiO-SiO}$

L36 ANSWER 6 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:660632 HCAPLUS Full-text

DOCUMENT NUMBER: 139:357206

ENTRY DATE: Entered STN: 25 Aug 2003

TITLE: NdFeB thick films prepared by tape casting

AUTHOR(S): Pawlowski, B.; Schwarzer, S.; Rahmig, A.; Topfer, J.

CORPORATE SOURCE: Hermsdorfer Institut für Technische Keramik e.V., Hermsdorf, 07629, Germany

SOURCE: Journal of Magnetism and Magnetic Materials (2003), 265(3), 337-344

CODEN: JMMMD; ISSN: 0304-8853

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

CLASSIFICATION: 77-8 (Magnetic Phenomena)

Section cross-reference(s): 38

## ABSTRACT:

NdFeB films of thickness between 100 and 800  $\mu\text{m}$  were prepared by tape casting of a slurry containing 84-95 wt% of com. NdFeB powder (MQP-B, -Q and -S). After curing the flexible green tapes at 120.degree.C non-porous magnetic films are obtained. The remanence of the films is in the range of 350-450 mT and the coercivity is between 300 and 800 kA/m depending on the type of MQP powder used. The magnetic properties of the films are discussed in relation to film composition and type of magnetic material. For MEMS applications the thick films are magnetized with a multi-pole stripe pattern with 1 mm pole pitch. The induction at the surface of the films was measured with a Hall probe and compared to theor. calcns. The results indicate that the films are completely magnetized regardless of the film thickness. Tape-casted NdFeB thick films are promising candidates for applications in micro-systems or actuators. Miniaturization of the magnet components

is one of the key issues in the development of electromagnetic micro-systems, thus creating a need for replacement of small sintered magnets by magnetic thick film components. Other applications include encoders.

SUPPL. TERM: neodymium iron boron magnetic film remanence  
coercivity

INDEX TERM: Casting of metals  
Coercive force (magnetic)  
Demagnetization  
Density  
Heat treatment  
Magnetic field effects  
Magnetic films  
Magnetic induction  
Microstructure  
Particle size distribution  
Porosity  
Remanence  
(NdFeB thick films prepared by tape casting)

INDEX TERM: Polymers, processes  
ROLE: PEP (Physical, engineering or chemical process);  
PYP (Physical process); TEM (Technical or engineered  
material use); PROC (Process); USES (Uses)  
(bonding agents; NdFeB thick films prepared by tape  
casting)

INDEX TERM: 94282-59-4  
ROLE: PEP (Physical, engineering or chemical process);  
PRP (Properties); PYP (Physical process); TEM  
(Technical or engineered material use); PROC  
(Process); USES (Uses)  
(NdFeB thick films prepared by tape casting)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS  
RECORD.

REFERENCE(S): (1) Chin, T; J Magn Magn Mater 2000, V209, P75 HCAPLUS  
(2) Christoph, V; Program Package "MAGFIELD" 1999  
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Workshop Rare Earth Magnets and their  
Application 2002, P478 HCAPLUS  
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Meeting 1999, P579  
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HCAPLUS  
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Preparation and Applications" 1999  
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(16) Yamashita, S; IEEE, Trans Magn 1992, V7, P45

ACCESSION NUMBER: 2002:632092 HCAPLUS Full-text  
DOCUMENT NUMBER: 138:65509  
ENTRY DATE: Entered STN: 22 Aug 2002  
TITLE: Pulsed microplasma cluster source technique for  
synthesis of nanostructured carbon films  
AUTHOR(S): Milani, P.; Piseri, P.; Barborini, E.;  
Kholmanov, I. N.  
CORPORATE SOURCE: INFN-Dipartimento di Fisica, Universita di  
Milano, Milan, I-20133, Italy  
SOURCE: NATO Science Series, II: Mathematics, Physics  
and Chemistry (2002), 61(New Trends in  
Intercalation Compounds for Energy Storage),  
561-564  
CODEN: NSSICD  
PUBLISHER: Kluwer Academic Publishers  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
CLASSIFICATION: 78-1 (Inorganic Chemicals and Reactions)

## ABSTRACT:

Nanostructured carbon thin films have been synthesized using the supersonic cluster beam deposition technique. Carbon clusters are produced in pulsed microplasma cluster source by using elec. discharge vaporization of the cathode. By controlling the key parameters of the vaporization process and some parts of the exptl. arrangement, cluster beam properties such as mass distribution of the cluster beam and kinetic energy of the particles can be improved. The method is also characterized by the high deposition rate of supersonic expanded cluster beam in comparison with other related techniques.

Low-d. nanostructured carbon porous thin

\*\*\*films\*\*\* synthesized by the method may find use in nanotechnol. applications.

SUPPL. TERM: pulsed microplasma cluster synthesis nanostructured  
carbon film  
INDEX TERM: Clusters  
Nanocrystalline materials  
Plasma  
(pulsed microplasma cluster source technique for  
synthesis of nanostructured carbon films)  
INDEX TERM: 7440-44-0, Carbon, processes  
ROLE: PEP (Physical, engineering or chemical process);  
PYP (Physical process); PROC (Process)  
(pulsed microplasma cluster source technique for  
synthesis of nanostructured carbon films)  
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS  
RECORD.  
REFERENCE(S): (1) Amaratunga, G; Nature (London) 1996, V383, P312  
(2) Milani, P; Cluster Beam Synthesis of  
Nanostructured Materials 1999  
(3) Muller, D; Atomic and Molecular Beam Methods 1988,  
V1  
(4) Reis, V; Chem Phys 1963, V39, P3240 HCAPLUS

L36 ANSWER 8 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 2000:419904 HCAPLUS Full-text  
DOCUMENT NUMBER: 133:47900  
ENTRY DATE: Entered STN: 23 Jun 2000  
TITLE: The quantitative morphology of roadside and  
background urban aerosol in Plymouth, UK  
AUTHOR(S): Dye, A. L.; Rhead, M. M.; Trier, C. J.

CORPORATE SOURCE: Department of Environmental Sciences, University  
of Plymouth, Plymouth, PL4 8AA, UK  
SOURCE: Atmospheric Environment (2000),  
34(19), 3139-3148  
CODEN: AENVEQ; ISSN: 1352-2310  
PUBLISHER: Elsevier Science Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
CLASSIFICATION: 59-2 (Air Pollution and Industrial Hygiene)  
Section cross-reference(s): 51

## ABSTRACT:

Anal. of the fine urban aerosol ( $<1\ \mu\text{m}$ ) was made using direct sampling of urban aerosol onto porous carbon films (PCF). The efficiency of collection was low, but the samples were representative and enabled transmission electron microscopy (TEM) for sub-micron particle anal. Measurement was made of the fractal dimensions and diameter of particles. PCF were used in the simultaneous collection of urban roadside and background aerosol, on four dates between Mar. and August, 1997, in Plymouth, England. The aerosol was classified into agglomerate and nonagglomerate groups. At the roadside, agglomerate particles accounted for 94% of the \*\*\*particles\*\*\* analyzed; this fell to 89% of the particles in the background samples. The anal. of agglomerate particles by energy dispersive x-ray spectroscopy confirmed their carbonaceous nature. A variety of agglomerate particles were found having coatings and mixed morphols. The morphol. of \*\*\*particles\*\*\* was analyzed using two fractal anal. techniques to derive a d. fractal dimension and a perimeter fractal dimension. These measures quant. describe the space-filling quality and the roughness of the boundary of the two-dimensional projection of the particle. The average perimeter fractal dimension (PFD) of aerosol was consistently significantly greater at the roadside than the background (+0.02), in anal. both including and excluding the nonfractal particles. There is evidence of a change in the average morphol. of aerosol between roadside and background aerosol, which is still the case when nonfractal \*\*\*particles\*\*\* are removed. This morphol. change may be due to the inclusion of particles from other nonagglomerate sources, which have a low fractal dimension, or it may be indicative of a smoother, aged roadside aerosol at the background site. The consistency of the difference between the roadside and the background aerosol morphol. suggests that there is some morphol. change that occurs in \*\*\*particles\*\*\* between the roadside and the background site.

SUPPL. TERM: urban aerosol roadside background quant morphol  
Plymouth England  
INDEX TERM: Air pollution  
(particulate; quant. morphol. of roadside  
and background urban aerosol in Plymouth, England)  
INDEX TERM: Airborne particles  
Atmospheric aerosols  
(quant. morphol. of roadside and background urban  
aerosol in Plymouth, England)  
INDEX TERM: Carbonaceous materials (technological products)  
ROLE: POL (Pollutant); OCCU (Occurrence)  
(quant. morphol. of roadside and background urban  
aerosol in Plymouth, England)  
INDEX TERM: Fractals  
(quant. morphol. of roadside and background urban  
aerosol in Plymouth, England, in relation to)  
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS

## RECORD.

## REFERENCE(S):

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L36 ANSWER 9 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1997:761876 HCAPLUS Full-text  
 DOCUMENT NUMBER: 128:51684

ENTRY DATE: Entered STN: 06 Dec 1997  
 TITLE: Manufacture of ultrafine particles by irradiation of a porous or textured target on substrates using high-energy beam for vaporization  
 INVENTOR(S): Tanaka, Shun-ichiro; Xu, Bingshe  
 PATENT ASSIGNEE(S): Research Development Corporation of Japan, Japan; Tokyo Shibaura Electric Co.  
 SOURCE: Eur. Pat. Appl., 26 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 INT. PATENT CLASSIF.:  
 MAIN: B22F009-02  
 SECONDARY: B22F001-00; C01B031-02; B01J019-12  
 CLASSIFICATION: 56-4 (Nonferrous Metals and Alloys)  
 Section cross-reference(s): 48, 57, 76  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 808682	A2	19971126	EP 1997-303487	19970522
EP 808682	A3	20000301	<--	
EP 808682	B1	20030716		
R: DE, FR, GB				
JP 09312261	A	19971202	JP 1996-126642	19960522
JP 3373357	B2	20030204	<--	
JP 09309713	A	19971202	JP 1996-126643	19960522
JP 3445059	B2	20030908	<--	
JP 09309798	A	19971202	JP 1996-126644	19960522
JP 3426083	B2	20030714	<--	
PRIORITY APPLN. INFO.:			JP 1996-126642	A 19960522
			<--	
			JP 1996-126643	A 19960522
			<--	
			JP 1996-126644	A 19960522

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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EP 808682 ICM B22F009-02  
 ICS B22F001-00; C01B031-02; B01J019-12  
 IPCI B22F0009-02 [ICM,6]; B22F0001-00 [ICS,6];  
 C01B0031-02 [ICS,6]; C01B0031-00 [ICS,6,C\*];  
 B01J0019-12 [ICS,6]  
 IPCR B01J0019-08 [I,C\*]; B01J0019-08 [I,A];  
 B01J0019-12 [I,C\*]; B01J0019-12 [I,A];  
 B22F0001-00 [I,C\*]; B22F0001-00 [I,A];  
 B22F0009-02 [I,C\*]; B22F0009-02 [I,A];  
 B22F0009-06 [I,C\*]; B22F0009-06 [I,A];  
 C01B0031-00 [I,C\*]; C01B0031-02 [I,A]  
 ECLA B01J019/08B; B01J019/12B; B01J019/12D;  
 B22F001/00A2B4; B22F009/02; B22F009/06;  
 C01B031/02B  
 JP 09312261 IPCI H01L0021-203 [ICM,6]; H01L0021-02 [ICM,6,C\*];  
 B01J0019-12 [ICS,6]; H01L0039-24 [ICS,6];  
 B22F0009-02 [ICS,6]  
 IPCR B01J0019-12 [I,C\*]; B01J0019-12 [I,A];  
 B22F0009-02 [I,C\*]; B22F0009-02 [I,A];  
 C23C0014-46 [I,C\*]; C23C0014-46 [I,A];  
 H01L0021-02 [I,C\*]; H01L0021-203 [I,A];  
 H01L0039-24 [I,C\*]; H01L0039-24 [I,A]  
 JP 09309713 IPCI C01B0031-02 [ICM,6]; C01B0031-00 [ICM,6,C\*];  
 B01J0019-12 [ICS,6]  
 IPCR C01B0031-00 [I,C\*]; C01B0031-02 [I,A];  
 B01J0019-12 [I,C\*]; B01J0019-12 [I,A]  
 JP 09309798 IPCI C30B0030-00 [ICM,6]; B01J0019-00 [ICS,6];  
 B01J0019-12 [ICS,6]; B22F0001-00 [ICS,6]  
 IPCR B01J0019-00 [I,C\*]; B01J0019-00 [I,A];  
 B01J0019-12 [I,C\*]; B01J0019-12 [I,A];  
 B22F0001-00 [I,C\*]; B22F0001-00 [I,A];  
 C30B0030-00 [I,C\*]; C30B0030-00 [I,A]

## ABSTRACT:

The target material having distributed pores is placed on a flat substrate, and is irradiated in vacuum with high-energy beam at an angle to the substrate to promote the target vaporization in pores followed by formation of ultrafine particles of nominally 1-10 nm size. The process is suitable for manufacture of ultrafine \*\*\*particles\*\*\* of metal or semiconductor materials, as well as the manufacture of fullerene particles from C films. The \*\*\*particle\*\*\* size and uniformity can be controlled by the pore texture and the irradiation conditions. The dispersed Au \*\*\*particles\*\*\* with average diameter of 2.4 nm were formed on supporting C film by placing Au-mesh target, followed by irradiation with inclined Ar-ion beam at 3.0 keV, 0.5 mA, and the vacuum of 10-3 Pa to promote formation of the typical Au particle in an original mesh pore.

SUPPL. TERM: porous target irradiation ultrafine powder pptn; metal powder pptn target beam irradiation; gold powder pptn target beam irradiation; semiconductor powder pptn target beam irradiation; fullerene powder pptn target beam irradiation; ion beam irradiation target vapor pptn; carbon support metal vaporizing ultrafine powder

INDEX TERM: Composites  
 (bonded powders; manufacture of ultrafine particles by irradiation of porous target heated on substrate by high-energy beam for local vapor precipitation)

INDEX TERM: Vapor deposition process  
 (irradiation and; manufacture of ultrafine particles)

by irradiation of porous target heated on substrate by high-energy beam for local vapor precipitation)

INDEX TERM: Particle beams  
(irradiation by high-power, for vapor precipitation; manufacture of ultrafine particles by irradiation of porous target heated on substrate by high-energy beam for local vapor precipitation)

INDEX TERM: Electron beams  
(irradiation by; manufacture of ultrafine particles by irradiation of porous target heated on substrate by inclined electron beam for vapor precipitation)

INDEX TERM: Fullerenes  
ROLE: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of; manufacture of ultrafine fullerenes by irradiation of porous target heated on substrate by high-energy beam for local vapor precipitation)

INDEX TERM: Semiconductor materials  
(powders from; manufacture of ultrafine particles by irradiation of porous target heated on substrate by high-energy beam for local vapor precipitation)

INDEX TERM: Powders  
(ultrafine, manufacture of precipitated; manufacture of ultrafine particles by irradiation of porous target heated on substrate by high-energy beam for local vapor precipitation)

INDEX TERM: 7440-44-0, Carbon, processes  
ROLE: PEP (Physical, engineering or chemical process); PROC (Process)  
(amorphous films; manufacture of ultrafine particles by irradiation of porous target heated on carbon film by high-energy ion beam for local vapor precipitation)

INDEX TERM: 7440-37-1, Argon, processes  
ROLE: PEP (Physical, engineering or chemical process); PROC (Process)  
(ion beam, irradiation with; manufacture of ultrafine particles by irradiation of porous target heated on substrate by high-energy ion beam for local vapor precipitation)

INDEX TERM: 7440-06-4, Platinum, uses 7440-21-3, Silicon, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses  
ROLE: TEM (Technical or engineered material use); USES (Uses)  
(powder, manufacture of ultrafine; manufacture of ultrafine particles by irradiation of porous target heated on carbon film by high-energy ion beam for local vapor precipitation)

L36 ANSWER 10 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 2

ACCESSION NUMBER: 1996:214293 HCAPLUS Full-text

DOCUMENT NUMBER: 124:305709

ENTRY DATE: Entered STN: 13 Apr 1996

TITLE: Metal-dispersed porous carbon films as electrocatalytic sensors

AUTHOR(S): Wang, Joseph; Pamidi, Prasad V. A.; Renschler,

CORPORATE SOURCE: Clifford L.; White, Christine  
Department of Chemistry and Biochemistry, New  
Mexico State University, Las Cruces, NM, USA  
SOURCE: Journal of Electroanalytical Chemistry (  
1996), 404(1), 137-42  
CODEN: JECHES  
PUBLISHER: Elsevier  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
CLASSIFICATION: 79-2 (Inorganic Analytical Chemistry)  
Section cross-reference(s): 9, 64, 67, 72, 80

## ABSTRACT:

The attractive features of ultrathin porous carbon  
\*\*\*films\*\*\* were coupled with the efficient catalytic action of  
\*\*\*dispersed\*\*\* metal particles. In particular, loading of  
these submicrometer foams with ruthenium or platinum centers  
offers a dramatic increase in the electron transfer rates of important  
redox systems, such as NADH, uric acid, ascorbic acid, acetaminophen,  
hydrazine or hydrogen peroxide. Characterization of the electrocatalytic  
behavior (with respect to the pH, scan rate or metal loading) and the  
attractive low-potential anal. (sensing) performance are reported. SEM  
sheds useful insights into the distribution of the metals  
within the porous electrode matrix.

SUPPL. TERM: metal dispersed porous  
carbon film electrocatalyst; sensor  
metal porous carbon film  
electrocatalyst  
INDEX TERM: Sensors  
(electrocatalytic; metal-dispersed  
porous carbon films as  
electrocatalytic sensors)  
INDEX TERM: Films  
(metal-dispersed porous  
carbon films as electrocatalytic  
sensors)  
INDEX TERM: Catalysts and Catalysis  
(electrochem., metal-dispersed  
porous carbon films as  
electrocatalytic sensors)  
INDEX TERM: 7440-06-4, Platinum, analysis 7440-18-8,  
Ruthenium, analysis  
ROLE: ARU (Analytical role, unclassified); CAT  
(Catalyst use); DEV (Device component use); ANST  
(Analytical study); USES (Uses)  
(metal-dispersed porous  
carbon films as electrocatalytic  
sensors)  
INDEX TERM: 7440-44-0, Carbon, analysis  
ROLE: ARU (Analytical role, unclassified); DEV (Device  
component use); ANST (Analytical study); USES (Uses)  
(metal-dispersed porous  
carbon films as electrocatalytic  
sensors)  
INDEX TERM: 50-81-7, Ascorbic acid, analysis 58-68-4, NADH  
69-93-2, Uric acid, analysis 103-90-2, Acetaminophen  
302-01-2, Hydrazine, analysis 7722-84-1, Hydrogen  
peroxide, analysis  
ROLE: ANT (Analyte); ANST (Analytical study)  
(redox compound determination by electrocatalytic sensors)

with metal-dispersed porous  
carbon films)

L36 ANSWER 11 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 1992:155139 HCAPLUS Full-text  
DOCUMENT NUMBER: 116:155139  
ENTRY DATE: Entered STN: 17 Apr 1992  
TITLE: Imaging of lubricating oil insolubles by  
electron microscopy  
AUTHOR(S): Shuff, P. J.; Clarke, L. J.  
CORPORATE SOURCE: Thornton Res. Cent., Shell Res. Ltd., Chester,  
CH1 3SH, UK  
SOURCE: Tribology International (1991), 24(6),  
381-7  
CODEN: TRBIBK; ISSN: 0301-679X  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
CLASSIFICATION: 51-8 (Fossil Fuels, Derivatives, and Related  
Products)  
Section cross-reference(s): 73

## ABSTRACT:

A range of techniques which permits the imaging, spatial  
\*\*\*distribution\*\*\* and, in some cases, the particle site  
\*\*\*distribution\*\*\* of lubricating oil insols. by electron microscopy is  
described and illustrated. Techniques and results discussed are: (1) oil  
removal/carbon film, holey carbon  
\*\*\*film\*\*\* filtering, freeze fracture replication), (2) capillary  
de-oiling/critical point drying, (3) particle siting of used oil  
insols., and (4) oil retention (cryoTEM, cryoultramicrotomy).

SUPPL. TERM: SEM TEM lubricating oil insol; imaging electron  
microscopy lubricating oil insol  
INDEX TERM: Paraffin waxes and Hydrocarbon waxes, miscellaneous  
ROLE: MSC (Miscellaneous)  
(electron microscopy of, imaging of lubricating oil  
insols. in relation to)  
INDEX TERM: Lubricating greases  
(imaging of, by electron microscopy)  
INDEX TERM: Soot  
(in used lubricating oil, imaging of, by electron  
microscopy)  
INDEX TERM: Lubricating oils  
(insols. of, imaging of, by electron microscopy)  
INDEX TERM: Microscopy, electron  
(of lubricating oil insols.)  
INDEX TERM: Lubricating oil additives  
(detergents, imaging of, by electron microscopy)  
INDEX TERM: Microscopy, electron  
(scanning, of lubricating oil insols.)  
INDEX TERM: Lubricating grease additives  
(soaps, imaging of, by electron microscopy)  
INDEX TERM: Microscopy, electron  
(transmission, of lubricating oil insols.)

L36 ANSWER 12 OF 20 COMPENDEX COPYRIGHT 2008 EEI on STN  
ACCESSION NUMBER: 1992(9):120005 COMPENDEX Full-text  
DOCUMENT NUMBER: 9209115835  
TITLE: Structural study of colloidal oxides by high  
resolution electron microscopy.  
AUTHOR: Kirkland, A.I. (Univ of Cambridge, Engl);

Jefferson, D.A.; Tang, D.  
 MEETING TITLE: Proceedings of the Institute of Physics Electron  
 Microscopy and Analysis Group Conference.  
 MEETING ORGANIZER: The Royal Microscopical Soc  
 MEETING LOCATION: Bristol, Engl  
 MEETING DATE: 10 Sep 1991-13 Sep 1991  
 SOURCE: Institute of Physics Conference Series v  
 119.Publ by IOP Publishing Ltd, Distribution  
 Department, Bristol, Engl.p 39-42  
 SOURCE: Institute of Physics Conference Series v  
 119.Publ by IOP Publishing Ltd, Distribution  
 Department, Bristol, Engl.p 39-42  
 CODEN: IPCSEP ISSN: 0951-3248  
 ISBN: 0-85498-408-9  
 PUBLICATION YEAR: 1991  
 MEETING NUMBER: 16592  
 DOCUMENT TYPE: Conference Article  
 TREATMENT CODE: Experimental  
 LANGUAGE: English  
 ABSTRACT: The morphology and surface structure exhibited in colloidal titanium  
 and cerium oxide particles has been examined by High Resolution Electron  
 Microscopy. Samples of concentrated sols of cerium and titanium oxide were prepared  
 for electron microscopy by extensive dilution with doubly distilled water followed  
 by ultrasonic dispersion and deposition onto holey carbon films. Refs.  
 CLASSIFICATION CODE: 741 Optics & Optical Devices; 804 Chemical  
 Products; 542 Light Metals & Alloys; 931 Applied  
 Physics; 549 Nonferrous Metals & Alloys  
 CONTROLLED TERM: \*MICROSCOPES, ELECTRON: Applications; TITANIUM  
 COMPOUNDS; OXIDES; CERIUM COMPOUNDS; COLLOIDS;  
 SURFACES: Microstructure  
 SUPPLEMENTARY TERM: HIGH RESOLUTION ELECTRON MICROSCOPY; SURFACE  
 MORPHOLOGY

L36 ANSWER 13 OF 20 JAPIO (C) 2008 JPO on STN  
 ACCESSION NUMBER: 1990-034703 JAPIO Full-text  
 TITLE: MANUFACTURE OF AROMATIZED POROUS METAL SINTERED  
 BODY  
 INVENTOR: NISHIMURA MINORU; KAMITAKI NAOHISA  
 PATENT ASSIGNEE(S): NISHIMURA MINORU  
 KAMITAKI NAOHISA  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 02034703	A	19900205	Heisei	B22F003-26

## APPLICATION INFORMATION

STN FORMAT: JP 1988-183004 19880722  
 ORIGINAL: JP63183004 Showa  
 PRIORITY APPLN. INFO.: JP 1988-183004 19880722  
 SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined  
 Applications, Vol. 1990  
 INT. PATENT CLASSIF.:  
 MAIN: B22F003-26  
 SECONDARY: B22F003-24

## ABSTRACT:

PURPOSE: To manufacture an aromatized porous metal sintered body having  
 excellent outward appearance and aromatizing durability by executing steam  
 treatment or anodic oxidizing treatment to a porous sintered body of metal  
 powder particles and impregnating aromatized liquid in this after forming

surface film. CONSTITUTION: The powder particles containing metal or alloy powder as main component is sintered after compressing and forming to obtain the porous sintered body. The steam treatment or anodic oxidizing treatment is executed to this sintered body to form the surface film. The above steam treatment is desirable to bring superheated steam into contact with the sintered body and treat for 0.5-1hr. Further, the anodic oxidizing treatment is desirable to execute by using the sintered body as the anode and graphite as the cathode in the water solution of  $<10\text{kmol/m}^3\text{NaOH}>$  at 70-90°C. By this surface film, voids among the particles in the sintered body are made small at least near the surface. After that, the aromatized liquid is impregnated in the above porous sintered body. By this method, dispersion of the impregnated aromatized-liquid is restrained to the min. and held to long time and also the outward appearance caused by the above surface film is improved. COPYRIGHT: (C)1990,JPO&Japio

L36 ANSWER 14 OF 20 JAPIO (C) 2008 JPO on STN  
 ACCESSION NUMBER: 1987-098259 JAPIO Full-text  
 TITLE: KIT FOR MEASURING IMMUNE ACTIVITY MATERIAL  
 INVENTOR: KAWASAKI TAKASHI  
 PATENT ASSIGNEE(S): NITTO ELECTRIC IND CO LTD  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 62098259	A	19870507	Showa	G01N033-543

## APPLICATION INFORMATION

STN FORMAT: JP 1985-239690 19851025  
 ORIGINAL: JP60239690 Showa  
 PRIORITY APPLN. INFO.: JP 1985-239690 19851025  
 SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1987

## INT. PATENT CLASSIF.:

MAIN: G01N033-543  
 SECONDARY: C12Q001-00

## ABSTRACT:

PURPOSE: To measure an immune active material with good accuracy by using a kit consisting of a dispersion of high-molecular particles deposited with an antigen or antibody specific to a material to be measured, porous film, enzyme labeled antigen or antibody specific to the material to be measured, substrate of enzyme and buffer solution

CONSTITUTION: This kit for measuring the immune active material is constituted of A): the dispersion of the high-molecular polymer particles deposited with the antigen or antibody specific to the material to be measured, B): a filter having the porous film, C): the enzyme labeled antigen or antibody specific to the material to be measured or the enzyme labeled material to be measured, D): the substrate of reaction (coloring reaction) while the enzyme of C) can catalyze, and E): the buffer solution to be used for cleaning in the stage of separation by the porous film. The material to be measured is measured by observing the coloration by enzyme reaction if such kit is used; therefore, the measurement is easily made with good accuracy. COPYRIGHT: (C)1987,JPO&Japio

L36 ANSWER 15 OF 20 INSPEC (C) 2008 IET on STN  
 ACCESSION NUMBER: 1987:2916683 INSPEC Full-text  
 DOCUMENT NUMBER: A1987-086155  
 TITLE: Intermetallic phases formed during DC-casting of an Al-0.25 wt pct Fe-0.13 wt pct Si alloy

AUTHOR: Skjerpe, P. (Dept of Phys., Oslo Univ., Norway)  
SOURCE: Metallurgical Transactions A (Physical  
Metallurgy and Materials Science) (Feb. 1987),  
vol.18A, no.2, p. 189-200, 35 refs.  
CODEN: MTTABN, ISSN: 0360-2133  
Price: 0360-2133/87/\$00.75

DOCUMENT TYPE: Journal  
TREATMENT CODE: Experimental  
COUNTRY: United States  
LANGUAGE: English

ABSTRACT: The Al-Fe and Al-Fe-Si particles formed during DC-casting of an Al-0.25 wt pct Fe-0.13 wt pct Si alloy have been examined. The particles were analyzed by transmission electron microscopy (TEM) and energy dispersive spectroscopy of X-rays (EDS). Crystal faults were studied by high resolution electron microscopy (HREM). Samples for electron microscopy were taken at various positions in the ingot, i.e. with different local cooling rates during solidification. At a cooling rate of 6 to 8 K/s the dominating phases were BCC  $\alpha$ -AlFeSi and BCT Al<sub>3</sub>Fe. The space group of BCC  $\alpha$ -AlFeSi was verified to be Im3. Superstructure reflections from Al<sub>3</sub>Fe were caused by faults on {110}-planes. At a cooling rate of 1 K/s the dominating phases were monoclinic Al<sub>3</sub>Fe and the incommensurate structure Al<sub>x</sub>Fe. In Al<sub>3</sub>Fe, stacking faults on {001} were frequently observed. The structure of Al<sub>x</sub>Fe is probably related to Al<sub>6</sub>Fe. Some amounts of other phases were detected. For EDS-analysis, extracted particles mounted on holey carbon films were examined

CLASSIFICATION CODE: A6155H Crystal structure of specific alloys;  
A6170P Stacking faults, stacking fault  
tetrahedra and other planar or extended defects;  
A6470 Phase equilibria, phase transitions, and  
critical points; A6470D Solid-liquid  
transitions; A8130B Phase diagrams of metals and  
alloys; A8130F Solidification

CONTROLLED TERM: aluminium alloys; casting; crystal atomic  
structure of alloys; iron alloys; phase  
diagrams; phase equilibrium; silicon alloys;  
solidification; stacking faults; transmission  
electron microscope examination of materials;  
X-ray chemical analysis

SUPPLEMENTARY TERM: direct chill casting; superstructure  
reflections; intermetallic phases; transmission  
electron microscopy; energy dispersive  
spectroscopy of X-rays; high resolution electron  
microscopy; local cooling rates; solidification;  
space group; dominating phases; monoclinic  
Al<sub>3</sub>Fe; incommensurate structure; stacking  
faults; Al-Fe-Si particles

CHEMICAL INDEXING: AlFeSi ss, Al ss, Fe ss, Si ss  
ELEMENT TERMS: Al\*Fe; Al sy 2; sy 2; Fe sy 2; Al<sub>3</sub>Fe; Al cp; cp;  
Fe cp; Fe\*Si; Si sy 2; Fe-Si; FeSi; Si cp; Al;  
Fe; Si; Al-Fe; Al\*Fe\*Si; Al sy 3; sy 3; Fe sy 3;  
Si sy 3; Al-Fe-Si; AlFeSi; Al<sub>3</sub>Fe; Al<sub>x</sub>Fe; Al<sub>6</sub>Fe

L36 ANSWER 16 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1986:43396 HCAPLUS Full-text  
DOCUMENT NUMBER: 104:43396  
ORIGINAL REFERENCE NO.: 104:6927a,6930a  
ENTRY DATE: Entered STN: 08 Feb 1986  
TITLE: The mechanism of the deposition of pyrolytic  
carbons  
AUTHOR(S): Kaae, J. L.  
CORPORATE SOURCE: G. A. Technol., Inc., San Diego, CA, 92138, USA  
SOURCE: Carbon (1985), 23(6), 665-73

CODEN: CRBNAH; ISSN: 0008-6223  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
CLASSIFICATION: 75-2 (Crystallography and Liquid Crystals)  
ABSTRACT:

The changes were studied in crystallite-preferred orientation, \*\*\*distribution\*\*\* of 0.1-1.0- $\mu$ m diameter pores, d., growth feature shape, and crystallite arrangement that occur with changes in the conditions of pyrolytic C deposition in a fluidized bed of \*\*\*particles\*\*\*. Based on these changes a deposition mechanism is proposed wherein changes in the crystallite-preferred orientation and the pore distribution are controlled by the relative concns. of 2 depositing components, which are solid particles and mol. species. Changes in the crystallite arrangement, and thereby the d., are controlled by changes in the reaction probability of the planar hydrocarbon mols. with the C surface.

SUPPL. TERM: deposition mechanism pyrolytic carbon; microstructure  
pyrolytic carbon deposition  
INDEX TERM: Pore  
(distribution of, in carbon  
pyrolytic films)  
INDEX TERM: Crystallites  
(orientation and size of, in pyrolytic carbon  
films)  
INDEX TERM: 7440-44-0, uses and miscellaneous  
ROLE: USES (Uses)  
(deposition of pyrolytic, microstructure and pore  
distribution in)

L36 ANSWER 17 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1984:212373 HCAPLUS Full-text  
DOCUMENT NUMBER: 100:212373  
ORIGINAL REFERENCE NO.: 100:32245a,32248a  
ENTRY DATE: Entered STN: 23 Jun 1984  
TITLE: Carbon sorbent for separating low- and  
high-molecular-weight substances  
INVENTOR(S): Solodovnik, V. D.; Solodkaya, T. I.; Davydov, A.  
B.; Malozemova, L. N.; Vysokosov, A. N.  
PATENT ASSIGNEE(S): All-Union Scientific-Research Institute of  
Medical Technology, USSR  
SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom.  
Obraztsy, Tovarnye Znaki 1984, (12), 79.  
CODEN: URXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Russian  
INT. PATENT CLASSIF.: C01B031-16; B01J020-20  
CLASSIFICATION: 48-1 (Unit Operations and Processes)  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 1082758	A1	19840330	SU 1977-2561311	197712 28

PRIORITY APPLN. INFO.: SU 1977-2561311 197712



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## PATENT CLASSIFICATION CODES:

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
SU 1082758	IC	C01B031-16; B01J020-20
	IPCI	C01B0031-16; C01B0031-00 [C*]; B01J0020-20
	IPCR	B01J0020-20 [I,C*]; B01J0020-20 [I,A];
		C01B0031-00 [I,C*]; C01B0031-16 [I,A]

## ABSTRACT:

A C sorbent for separating low- and high-mol. weight substances is prepared by \*\*\*dispersing\*\*\* it in a solution of film-forming material in the presence of a solvent, removing the C particles with the layer of film-forming material applied to them, removing the remaining solvent from the film-forming material and then drying the product. The degree of separation of low- and high-mol.-weight substances is increased and the absorption kinetics of low-mol.-weight compds. improved by decreasing the degree of filling of the porous structure of the C with the film-forming material, by first impregnating the \*\*\*particles\*\*\* of activated C with a liquid mixed with the solvent, and then removing the excess liquid CHCl<sub>3</sub> may be used as this liquid, poly(vinyl alc.) as the film-forming material, and H<sub>2</sub>O as the solvent for the latter. Acetylcellulose may be used as film-forming material, and COMe<sub>2</sub> as the solvent, also.

SUPPL. TERM: low mol wt substance sepn; high mol wt substance sepn;  
carbon sorbent sepn

INDEX TERM: 7440-44-0, uses and miscellaneous  
ROLE: USES (Uses)  
(active, adsorbents, coating of)

INDEX TERM: 67-64-1, uses and miscellaneous  
ROLE: USES (Uses)  
(as solvent, in coating of active carbon)

INDEX TERM: 9002-89-5 9004-35-7  
ROLE: USES (Uses)  
(coating with, of active carbon)

INDEX TERM: 67-66-3, uses and miscellaneous 7732-18-5, uses and  
miscellaneous  
ROLE: USES (Uses)  
(impregnating with, of active carbon before  
coating)

L36 ANSWER 18 OF 20 COMPENDEX COPYRIGHT 2008 EEI on STN

ACCESSION NUMBER: 1986(12):205055 COMPENDEX Full-textTITLE: FILM GROWTH ON ALUMINUM ALLOYS DURING AC  
ANODIZING IN SULPHURIC AND OXALIC ACID  
SOLUTIONS.AUTHOR: Zahavi, J. (Technion-Israel Inst of Technology,  
Haifa, Isr); Kerbel, H.; Korotkina, O.MEETING TITLE: 71st.AES Annual Technical Conference  
Proceedings.MEETING ORGANIZER: American Electroplaters' Soc Inc, Winter Park,  
FL, USA

MEETING LOCATION: New York, NY, USA

MEETING DATE: 16 Jul 1984-19 Jul 1984

SOURCE: Annual Technical Conference - American  
Electroplaters' Society 71st.Publ by American  
Electroplaters' Soc Inc, Winter Park, FL, USA  
Pap G-3, 24p

SOURCE: Annual Technical Conference - American

Electroplaters' Society 71st. Publ by American  
Electroplaters' Soc Inc, Winter Park, FL, USA  
Pap G-3, 24p  
CODEN: ATCSDW ISSN: 0270-2622

PUBLICATION YEAR: 1984  
MEETING NUMBER: 06051  
DOCUMENT TYPE: Conference Article  
LANGUAGE: English

ABSTRACT: Studies are being made of A-C anodizing processes on aluminum commercial alloys in sulfuric and oxalic acids at constant AC voltages. Special attention is given to the effect of intermetallic second phase particles dispersed in these alloys on AC film growth and properties. Porous A-C film thickness increased with anodized time, electrolyte temperature and concentration and anodizing voltage on all the aluminum alloys used in this work. Intermetallic compounds dispersed in the aluminum alloy matrix incorporated into the anodic films during their formation and thus affected film composition and properties. (Edited author abstract) 13 refs. CLASSIFICATION CODE: 541 Aluminum & Alloys; 539 Metals Corrosion &

Protection; 423 General Materials Properties & Testing; 944 Moisture, Pressure & Temperature, & Radiation Measuring Instruments; 804 Chemical Products; 802 Chemical Apparatus & Plants  
CONTROLLED TERM: \*ALUMINUM AND ALLOYS: Anodic Oxidation; PROTECTIVE COATINGS: Thickness Measurement; FILMS: Preparation; SULFURIC ACID: Chemical Reactions; ACIDS: Organic  
SUPPLEMENTARY TERM: SCANNING ELECTRON MICROSCOPE; TRANSMISSION ELECTRON MICROSCOPE; ELECTRON PROBE MICROANALYZER; ALTERNATING CURRENT ANODIZATION; OXALIC ACID; BARRIER LAYER

L36 ANSWER 19 OF 20 HCAPLUS COPYRIGHT 2008 ACS on STN DUPLICATE 3

ACCESSION NUMBER: 1982:481673 HCAPLUS Full-text  
DOCUMENT NUMBER: 97:81673  
ORIGINAL REFERENCE NO.: 97:13441a, 13444a  
ENTRY DATE: Entered STN: 12 May 1984  
TITLE: A.c. anodizing processes of aluminum alloys  
AUTHOR(S): Zahavi, Joseph; Kerbel, H.; Korotkina, O.  
CORPORATE SOURCE: Israel Inst. Met., Technion, Haifa, Israel  
SOURCE: Journal of the Electrochemical Society (1982), 129(7), 1572-9  
CODEN: JESOAN; ISSN: 0013-4651  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
CLASSIFICATION: 72-7 (Electrochemistry)

ABSTRACT: Studies were made of thick a.c. anodic films on com. purity Al and Al-Cu alloys in H<sub>2</sub>SO<sub>4</sub> and oxalic acid solns., with particular examination of the constituents in these alloys. Film structure, topog. and composition were characterized through electron microscopy and electron microprobe anal. Fe-rich 2nd-phase particles and Cu-rich, Fe, and Mn \*\*\*dispersed\*\*\* intermetallics present in the AA 1100-H14 [11146-12-6] and in AA 2024 T 3 [12616-84-1], resp., were incorporated and retained in the a.c. films during their growth. The embedment of these 0.5-10 µm intermetallic constituents did not substantially affect a.c. thick porous film growth, film/electrolyte and film/metal interfaces, film pore and barrier layer structures, or uniformity of film thickness. The mechanisms of incorporation of nonreactive Fe-rich 2nd-phase particles and reactive Cu-rich intermetallics into the growing film are discussed.

SUPPL. TERM: intermetallic incorporation anodized aluminum alloy;  
alternating current anodization aluminum alloy; oxalic  
acid anodization aluminum alloy; sulfuric acid  
anodization aluminum alloy

INDEX TERM: Intermetallic compounds  
ROLE: PROC (Process)  
(incorporation of, in anodic coatings, on aluminum  
alloys from a.c. anodization in oxalic and sulfuric  
acids)

INDEX TERM: Anodization  
(of aluminum alloy, in oxalic acid and sulfuric  
acid, using a.c.)

INDEX TERM: Electric current  
(alternating, in anodization in aluminum alloys in  
oxalic and sulfuric acids)

INDEX TERM: Coating materials  
(anodic, on aluminum alloys, **dispersed**  
intermetallics in, from a.c. anodization in  
sulfuric and oxalic acids)

INDEX TERM: 144-62-7, uses and miscellaneous  
ROLE: USES (Uses)  
(anodization of aluminum alloys in solns. containing,  
using a.c., **dispersed** intermetallics in  
anodic films in relation to)

INDEX TERM: 7664-93-9, uses and miscellaneous  
ROLE: USES (Uses)  
(anodization of aluminum alloys in solns. of, using  
a.c., **dispersed** intermetallics in anodic  
films in relation to)

INDEX TERM: 11146-12-6 12616-84-1  
ROLE: PRP (Properties)  
(coatings on, anodic, incorporation of  
**dispersed** intermetallics in, from a.c.  
anodization in oxalic acid and sulfuric acid  
solns.)

L36 ANSWER 20 OF 20 JAPIO (C) 2008 JPO on STN

ACCESSION NUMBER: 2004-335459 JAPIO Full-text

TITLE: METAL CARRYING POROUS CARBON  
FILM, ELECTRODE FOR FUEL CELL, AND FUEL  
CELL USING THE SAME

INVENTOR: OYA NOBUO; FUJII YUICHI; MATSUO MAKOTO; TAKAGI  
JUN

PATENT ASSIGNEE(S): UBE IND LTD

PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 2004335459	A	20041125	Heisei	H01M004-86

## APPLICATION INFORMATION

STN FORMAT: JP 2004-121247 20040416

ORIGINAL: JP2004121247 Heisei

PRIORITY APPLN. INFO.: JP 2003-113978 20030418

SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined  
Applications, Vol. 2004

INT. PATENT CLASSIF.:  
MAIN: H01M004-86  
SECONDARY: H01M004-88; H01M004-92; H01M008-10

ADDITIONAL:

C01B031-02

## ABSTRACT:

PROBLEM TO BE SOLVED: To provide a metal carrying porous carbon film made to uniformly carry metal fine particles of controlled particle sizes, having a carrier structure capable of effectively utilizing a metallic catalyst, manufactured by a simple manufacturing process, and to provide an electrode for a fuel cell, and the fuel cell using the same.

SOLUTION: In the metal carrying porous carbon film, metal particles having average particle diameters of 0.7-20 nm, especially 1-10 nm, are dispersed and carried on a surface wall having fine pores. The electrode for a fuel cell using the metal carrying porous carbon film and an

membrane-electrode junction made by jointing the electrode for a fuel cell on both sides of a polymer electrolyte membrane are obtained.

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